

ARCHAEOLOGICAL AND HISTORICAL INVESTIGATIONS OF JOE POOL LAKE

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Project Research

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Institute for the Study of Earth and Man
Northern Michigan University

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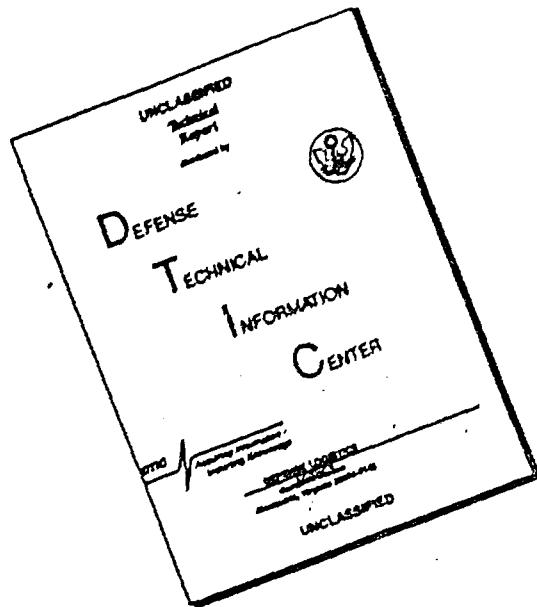
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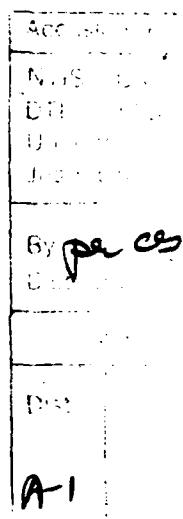
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ARCHAEOLOGICAL AND HISTORICAL INVESTIGATIONS OF JOE POOL LAKE, NORTH CENTRAL TEXAS

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Finally, we wish to emphasize that this brochure is the result of the contributions of many individuals who participated in the Joe Pool Lake Archaeological Project between 1977 and 1986. It reflects the work of staff members, field assistants, and consultants. We appreciate the contributions of the illustrators and graphic artists Lucile R. Addington, Karim Sadr, and William A. Martin, who contributed to this pamphlet. Stan Solamillo, M. Karpenko, Tom Shaw, and Will Alexander of Environmental Consultants, Inc. prepared the Historic American Buildings Survey (HABS) drawings. We also want to thank Sue E. Linder-Linsley and Melissa M. Green for their assistance in the production of this brochure.

THE SCIENTIFIC STUDY OF THE HUMAN PAST

The field of archaeology addresses the full record of human history before writing was invented. Native Americans have lived in Texas for over 12,000 years. Without archaeological studies, the record of many of these early peoples can not be recognized. At the same time, archaeology is able to provide historians with additional details of our recent past, and useful insights into past settlements.

As a discipline, *archaeology*¹ is very young in comparison to other fields such as astronomy, chemistry, history, or mathematics. Many of the guiding principles and field techniques in archaeology are little over a century old. What things do modern archaeologists search for among the ruins of the past? Where are archaeologists actively working today? Of what value are their findings to those of us living today?

These three questions are answered in this booklet. Examples are drawn from archaeological investigations conducted during the construction of Joe Pool Lake in North Central Texas. This man-made reservoir, located southwest of Dallas, was completed in 1986 by the U. S. Army Corps of Engineers, Fort Worth District (Figure 1). It involved the construction of a dam, 4.2 miles long, on Mountain Creek that created a lake capable of covering 10,900 acres. In order to *rescue* important archaeological data from destruction due to land alterations, flooding, and other lake related improvements, archaeological excavations were carried out at 18 sites noted for containing significant and valuable information². This booklet explains why these investigations were conducted and reveals the important information which was recovered or rescued.

As these examples will illustrate, archaeologists study the physical remains of the human past. Fossil bones of extinct dinosaurs, birds, fish, and shells millions of years old are not the subject of scientific inquiry by archaeologists. Fossils of extinct forms of plants and animals are studied by specialists educated in paleontology, a subfield of

¹ Terms in italics are defined in a Glossary given at the end of this booklet.

² These investigations were conducted by the Archaeology Research Program, Southern Methodist University, Dallas.

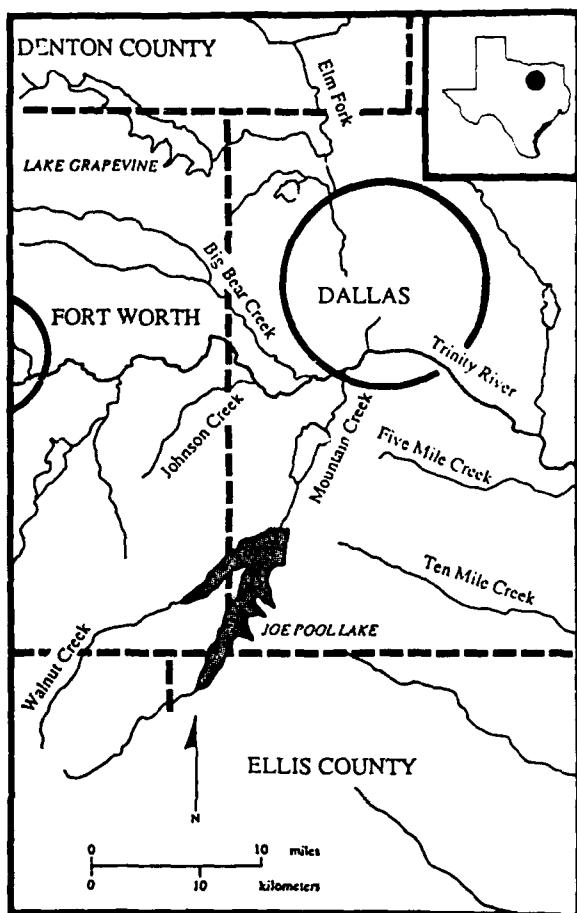


Figure 1. Joe Pool Lake is located in southwestern Dallas County about equal distant from Dallas and Fort Worth, North Central Texas.

geology. Geologists study rocks and paleontologists study fossils. Archaeologists study artifacts left behind by people. Archaeology, therefore, is part of the larger field of *anthropology*, the scientific and humanistic study of man and culture.

RESCUE AND CONSERVATION ARCHAEOLOGY

In the last 50 years, a special type of archaeology has grown in scope and application. *Rescue archaeology*, also called *public or conservation archaeology*

ion archaeology, has saved remains of the human past from needless loss and destruction often associated with publicly funded construction. Today, many archaeologists work in cooperation with private and public agencies to protect archaeological remains in accordance with state and federal antiquity laws (see note inside front cover). Their primary goal is to manage, conserve, and when possible, preserve some of our country's fragile and irreplaceable archaeological resources. Since conservation and preservation are the primary objectives, the work of these archaeologists is often referred to as *cultural resource management* (CRM).

Digging up artifacts or excavating sites is a last resort in CRM studies, only to be employed when their destruction is imminent and unavoidable. The United States is not the only nation that places a value on its past. England, Italy, Egypt, Mexico, China, and many other countries have also implemented laws and regulations concerning the inadvertent or wanton loss of their cultural and archaeological heritage. Notable foreign examples include the combined international forces used to rescue important Egyptian ruins and landmarks from flooding associated with the raising of the Aswan Dam on the Nile in the 1960s, or the building of the subway system beneath the streets of Rome, Italy.

Although the United States does not contain spectacular ruins of early civilizations matching the Egyptian or Roman examples, it does possess a rich and varied archaeological past covering at least 15,000 years of human history. Since 1906, several federal laws have been enacted to protect important archaeological sites and artifacts. Since then, these laws have been expanded to treat and protect archaeological remains as important resources which deserve proper attention. Like natural resources, such as clean water, clear air, and wildlife, archaeological remains are important *cultural resources* that need to be conserved for the benefit and enjoyment of future generations. But unlike some natural resources, archaeological sites are fragile and non-renewable. Once they are damaged or destroyed, no amount of research can repair or restore them; therefore, much of their scientific and historical value is lost. Rescue archaeology, however, provides an opportunity to examine and remove important information from a site before it is altered or destroyed.

Not all archaeology can be labeled rescue

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archaeology. In many instances, archaeological investigations are conducted early in the planning of a major construction project. When several construction options are feasible, engineers and architects may select one plan over another to avoid undue destruction or loss of important natural and cultural resources, including archaeological remains. In this case, the implementation of archaeological investigations at an early stage in the design of a project can help the planning agency avoid more costly studies related to the removal of significant remains prior to their destruction. This application of archaeology, which saves or conserves an archaeological site from potential loss, is referred to as *conservation archaeology*. Together, conservation and rescue archaeology are working to save a portion of our rich archaeological past so that the generations of today and tomorrow will have a heritage to enjoy and explore.

The archaeological studies associated with the construction of Joe Pool Lake are a good example of both conservation and rescue archaeology in action. This booklet explains the nature of these archaeological investigations, and some of the important accomplishments achieved to date. Most importantly, it illustrates some of the reasons why our archaeological heritage is a valuable resource both today and for future generations yet to come.

JOE POOL LAKE ARCHAEOLOGICAL PROJECT

Several archaeological investigations have been carried out in the Joe Pool Lake project area since 1977. The first phase of study, conducted between 1977 and 1979, identified 42 archaeological and historical sites in the vicinity of the then proposed Lakeview Lake, since renamed Joe Pool Lake. The study was conducted by archaeologists from Southern Methodist University and was funded by the federal government through the U. S. Army Corps of Engineers, Fort Worth District. Archaeological properties identified at that time included small, briefly occupied camps of *prehistoric hunter/gatherers*, several larger reoccupied prehistoric camps, a small prehistoric village, an antebellum plantation, several large post-Civil War farmsteads, and a number of late nineteenth century farmsteads with standing buildings.

The results of the first phase of archaeological research in the project area were used to organize a second, more intensive phase of study. Test excavations were conducted at fifteen sites to obtain a better understanding of the buried deposits and archaeological remains found at these locations. Sites selected for *test excavations* were those that showed the best promise for yielding important artifacts, buried features, and significant remains for answering questions about past prehistoric people or early settlers of the area. These limited excavations provided the necessary information to identify the most representative sample of archaeological sites useful for addressing specific scientific questions. But precisely how does one identify an important archaeological site?

Obviously, not all archaeological sites contain remains that are suitable for answering scientific questions or important enough to warrant future preservation. At best, any archaeological site contains only part of the record of the human occupation responsible for its existence. Many items deteriorate after abandonment or accidental loss. Bone tools, skins and cloth, wooden implements, grass matting and baskets, food, seeds, vegetable matter, and other organic materials are seldom preserved except under ideal conditions. While all of these items were frequently discarded by prehistoric people at their dwellings, campsites, and food gathering or processing locations, it is only the stone tools, pottery sherds, charcoal, burned rock, and soil discolorations that are still preserved after hundreds or thousands of years.

These bits and pieces of tools, personal possessions, and household items make up a great majority of the artifacts recovered from *prehistoric sites*. Stone arrow points or clay pottery *sherds* by themselves, however, are not very informative. It is their *archaeological context* that provides the greatest amount of information on the past. Context, or *provenience*, is the specific location of an artifact within a site in relation to other artifacts and features. As an example, let us consider the piece of prehistoric pottery shown in Figure 2. Without a context or provenience, the pottery sherd is of little historical or scientific value. But, let us now state that it was excavated from an underground pit containing many other items at the Cobb-Pool site near the dam of Joe Pool Lake. Since the sherd



Figure 2. Fragment of a prehistoric clay pot found at Joe Pool Lake with distinctive surface decoration dating to the 10th and 11th centuries A.D.

exhibits a distinctive surface decoration which is similar to that used by the Caddoan Indians living in East Texas during the 10th and 11th centuries A.D., one may interpret that an exchange of goods or ideas may have flowed between the two areas. Of course, not all decorated sherds can be dated, but this particular sherd is distinctive and is common on some Caddoan Indian sites. Consequently, this sherd may provide a meaningful context for the age of the other items found along with it. Since it was excavated from an abandoned and buried food storage pit (a hollowed out hole used to store corn or other plant food remains), then its relationship with the pit gives the archaeologist some important information about when the site was occupied and who the people were who once lived there. Furthermore, other items recovered from the pit, including bone fragments, mussel shell, flint flakes, a broken flint knife, and charred seeds add to the story of the people who once occupied the site.

Archaeological context, or the association of all artifacts and features, provides the background in which archaeological remains gain meaning. It is this context that archaeologists strive to recover, and not simply a shoe box full of artifacts that gathers dust on a closet shelf.

ARTIFACTS, SITES, AND THE NATIONAL REGISTER OF HISTORIC PLACES

So far, information has been presented on a very general level without any real discussion of what constitutes an *artifact* or *site*. An artifact is any material item or object that shows evidence of modification or manufacture by a human. Examples of prehistoric artifacts are arrow points chipped from stone, cut animal bones, sherds of clay pottery, or pieces of clay, called daub, used to build a hut. Artifacts of recent societies, such as mid-nineteenth century Texas pioneers, include window glass fragments, nails, brick fragments, sherds of stoneware pottery, butchered beef bones, and buttons. As all of these examples illustrate, artifacts can be a broad range of items related to many different uses. This booklet could become an artifact given the right conditions. If it were stored in a dry cave, like the two thousand year old Dead Sea Scrolls found in Israel several decades ago, then it might be preserved for future generations.

Archaeological sites, on the other hand, are less easily defined. A site is a specific location where past human activities have left physical traces. Sites can range in size from the small camp where a few flint flakes remain after a hunter sharpened a spear, to an entire city. It may be as recent as bottle caps dropped yesterday or as ancient as the oldest stone tools found in Africa and manufactured by our distant ancestors over 2 million years ago. As a concept, an archaeological site is defined in relation to some specific physical remains and an explicit set of scientific problems. For the Joe Pool Lake studies, all of the archaeological sites contained tangible historic or prehistoric artifacts, and many yielded important features and other buried remains. The importance of some sites over others, however, was recognized by their individual potential to provide valuable information in relation to the project's research design, a written scientific "blueprint" composed to direct the studies. In CRM investigations, a research design is required to address, among other questions, the importance of an archaeological site in terms of four criteria outlined by the *National Register of Historic Places* (hereafter referenced as NRHP).

The NRHP offers an important set of guiding

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principles or criteria for identifying the value of an archaeological site or historic structure. It not only requests archaeologists to consider the scientific merit of a site, but also its humanistic and historical value. As a result, sites on the National Register not only include archaeologically important places such as Jamestown, Virginia, or Mesa Verde, Colorado, but also Plymouth Rock, Massachusetts which has no significant archaeological remains.

Archaeological sites in the Joe Pool Lake area were evaluated using National Register criteria. The eighteen sites which received rescue archaeology were deemed to be significant based on these criteria. In general, a site or structure is required to be at least 50 years old before it can be considered for significance and nominated to the NRHP. Given this minimum age, the National Register then requires that a property (archaeological site, historic building, object, or district) meet at least one of the following four criteria of significance to be eligible for nomination. Eligible properties:

- 1) are associated with events that have made a significant contribution to the broad patterns of our history; or
- 2) are associated with the lives of persons significant in our past; or
- 3) embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; or
- 4) have yielded, or may be likely to yield, archaeological information important in prehistory and/or history.

These four criteria provide the necessary set of guidelines for evaluating and identifying important archaeological sites, historic buildings, structures, and even entire districts. They are intended to give formal recognition to all properties that have contributed to our rich heritage whether they are from the recent historic past or from the more distant prehistoric past. As such, the National Register is a catalog containing a major, but incomplete, listing of our cultural heritage. It is a listing of the tangible elements of our past, a record of physical structures,

places, objects, and archaeological sites that have played an important role in the cultural and historical development of our country from the very beginnings of human history in North America.

In Texas, the National Register has listed over 1,000 nominations since the first property was designated in 1969. Although properties of national significance were identified as National Landmarks as early as 1935, following the *Historic Sites Act* passed by Congress in that year, it was not until 1966, following the *National Historic Preservation Act*, that properties of state and local significance were also considered worthy of protection under the National Register. Today, the National Register of Historic Places contains properties of immense national significance as well as more common properties which illustrate our cultural development and heritage. National Register properties in Texas include Mission San Antonio de Valero, more commonly known as the Alamo, the thirteenth century Native Indian pueblo of Landergin Mesa in the Panhandle, Fort Concho in San Angelo, the 11,000 year old Lubbock Lake archaeological site, Lyndon Johnson's boyhood home in Johnson City, the State Capitol building in Austin, and stone carvings and paintings (*petroglyphs* and *pictographs*, respectively) as old as A.D. 200 at Hueco Tanks near El Paso. Other examples much closer to the Joe Pool Lake Project include the blue granite and red sandstone Dallas County Courthouse (built in 1891), the 12 block Munger Place Historic District, and 10 Georgian Revival buildings on the campus of Southern Methodist University in Dallas County. In Tarrant County, examples include the Fort Worth Stockyards Historic District, Thistle Hill, and the Blackstone Hotel. Dallas and Tarrant Counties together contain 59 separate properties, including several large districts, listed on the National Register as of 1984. Of this number, only one is strictly an archaeological site. All the others are historic buildings, structures, or districts.

It is clear from these examples that historic buildings and structures make up the greatest proportion of properties listed in the National Register to date. Many archaeological properties are eligible for protection through the National Register of Historic Places without being placed on it. The eighteen sites that received intensive study within the Joe Pool Lake project area were also determined eligible for

nomination by the Texas Historical Commission without being formally placed in the National Register of Historic Places. The value of each of these archaeological sites is identified in the research design or framework for scientific study compiled by SMU archaeologists and used to direct the rescue efforts. At the completion of the archaeological investigations at Joe Pool Lake, two prehistoric and seven historic properties were still sufficiently intact to be recommended for nomination to the National Register of Historic Places.

RESEARCH DESIGNS

A research design is simply a guiding framework or set of ideas that helps to direct archaeologists as they identify, evaluate, and rescue important archaeological sites and data. In this regard, a research design guides archaeological investigations in much the same way a blueprint directs an engineer and architect. In both cases, preliminary ideas are put down on paper and revised and refined based on rigorous evaluation and testing. In a series of reevaluations and modifications, the initial research design becomes tailored to more closely fit the importance and research potential of the archaeological remains under study. Like an architect modifying his plans based upon his clients needs and cost limitations, the archaeologist uses a research design to outline the future archaeological studies. Without an explicit design, the archaeologist not only wastes valuable time and money, but also ends up with a haphazardly collected product. The research design, therefore, serves an important role in directing archaeological investigations.

For the Joe Pool Lake archaeological studies discussed next, the research design is divided into two segments: (1) historic and (2) prehistoric. The following sections briefly convey the scientific basis for the Joe Pool Lake archaeological research along with some of the more interesting results.

HISTORIC RESEARCH DESIGN

Thirteen historical sites received archaeological investigations to recover important information about early settlers and nineteenth century farmers

living in the project area. In addition to excavating soil to recover artifacts, fieldwork also involved the recording of standing architecture, interviewing senior citizens about traditional farm life, and conducting archival and historical research to gather important information on these farms. All of these investigations were designed to provide a fuller understanding of the ethnic diversity, historical development, and changing *demography* of the families that settled in the Mountain Creek area since the 1840s.

The archaeological, architectural, and written records of the families that settled this area during the last 150 years need to be combined if we are to appreciate the entire story of the development of this part of Texas. Archaeological investigations of nineteenth century farmsteads such as the ones addressed in the Joe Pool Lake studies are a comparatively recent endeavor in North Central Texas. The research design used to address the significance of these sites focused on the integration of archaeological data with written records and *oral history*. Farmstead sites, like the ones studied here, once formed the backbone of rural America (Figure 3). In 1890 for example, two of every three households in the United States lived on farms. In Texas, the ratio was considerably higher, reaching about six of every seven. In the following five decades, the nature of rural America, including Texas, changed dramatically as many families gave up farming to pursue new opportunities offered in America's growing cities. Farmers make up an extremely small proportion of today's population.

Farming itself has also changed with the times. Mechanization has forced most farmers to become industrialized and has made agribusiness a necessary and viable alternative to the old family farm. A detailed history of the traditional farmstead, like studies of the cotton tenant farmer of yesterday, has been ignored due to the American desire for progress. What seemed unimportant at the time that many changes were taking place has since become lost in the passing of decades and changing of generations.

Occasionally, one finds an older farmstead complete with many of its traditional outbuildings still intact like the John Wesley Penn farmstead in the Joe Pool Lake area (Figure 4). Only then can one really visualize and fully understand the degree of social and technological change that separates the

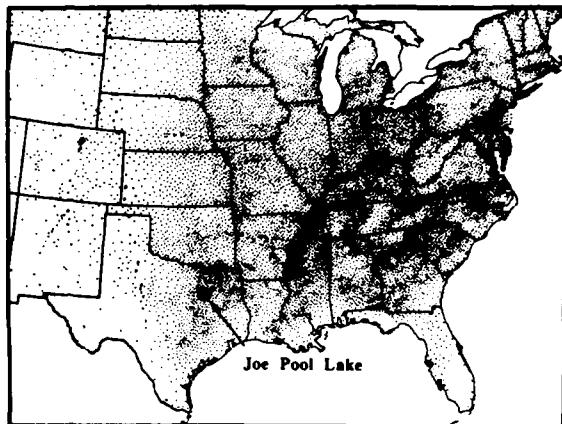


Figure 3. The distribution of farms across the southern and eastern U.S. in 1920. Each dot represents 500 farms. Dense clusters of farms are noticeable along major fertile river valleys. A lighter clustering of farms is noticeable across the blackland prairies of Texas, which also encompass Joe Pool Lake (From U.S. Department of Agriculture Yearbook 1921:489).

families of today from those of only two or three generations ago. The Penn farmstead may one day be restored as an early twentieth century working farm museum, complete with a staff performing day-to-day chores in period dress and using authentic tools and animal labor. If restored, the Penn "working period farm" will rank among the most intact historical parks in North Central Texas. It will serve as a tribute to rural Texan farmers and will be among the most complete nineteenth century farmsteads in the state³. The archaeological investigations conducted on the Penn farmstead as a part of the Joe Pool Lake CRM studies have provided important information on the full archaeological potential of this property, and they have underscored the value of preserving this farm.

So far, we have merely pointed out the historical importance of one site. What is it that the other twelve historical sites have to offer the archae-

³The Saur-Beckmann farm on LBJ State Park in Gillespie County, 60 miles west of Austin, is the only current living history farm that is comparable to the Penn farmstead in terms of authentic, standing buildings.

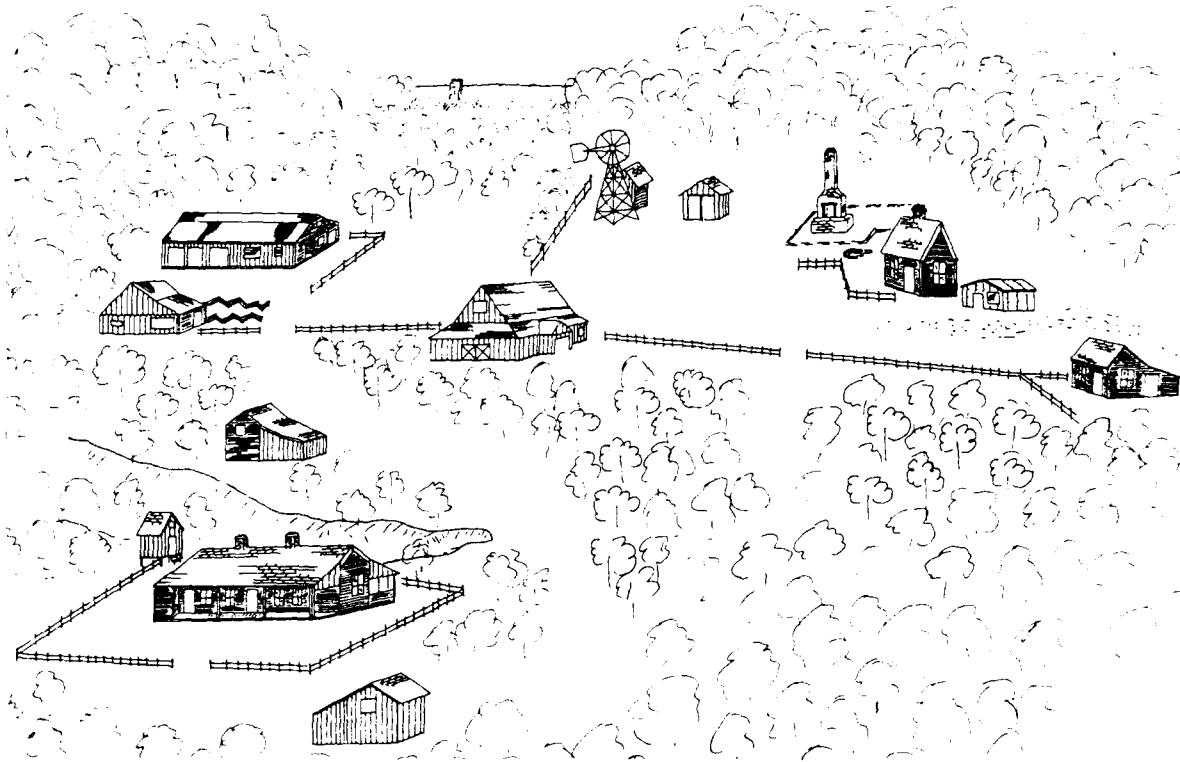


Figure 4. Schematic of Penn Farmstead in Dallas County. Major structures and outbuildings date from the late 1850s up to the 1920s.

ologist, historian, or mere curiosity seeker? Some answers can be found in the recent studies of rural farmsteads in the Richland/Chambers Reservoir located about 60 miles south of Dallas. These studies, like the Joe Pool Lake investigations, revealed that farmhouses and their outbuildings were surrounded by abundant archaeological deposits useful for studying past lifeways⁴. In both cases, farmstead sites were found to contain rich historical information on a way of life that is no longer practiced today.

The Joe Pool Lake investigations, like the Richland/Chambers investigations, also encountered substantial archaeological deposits or *middens* around many dwellings. Buried in the soil around

these houses were artifacts numbering in the hundreds of thousands. These small pieces of glass, pottery, bone, metal, wood, and other materials represented a rich but fragmented record of some daily activities and household possessions of the past (Figure 5). Furthermore, systematic study of these midden deposits revealed that their artifacts were not haphazardly scattered about, but actually formed a physical map of some of the yard activities conducted during the life of the farmhouse (Figure 6).

Little more than fifty years ago, the rural yard was the center of much household activity. Before electricity and other modern conveniences, the yard received more intensive use than many interior parts of the farmhouse. Children and adults did chores ranging from fetching water, splitting wood, or washing clothes to making soap, feeding chickens, butchering animals, or cooking. The yard itself was markedly different than today. Instead of a lush green

⁴ These studies were funded by the Tarrant County Water Control and Improvement District Number One in compliance with state and federal CRM requirements.

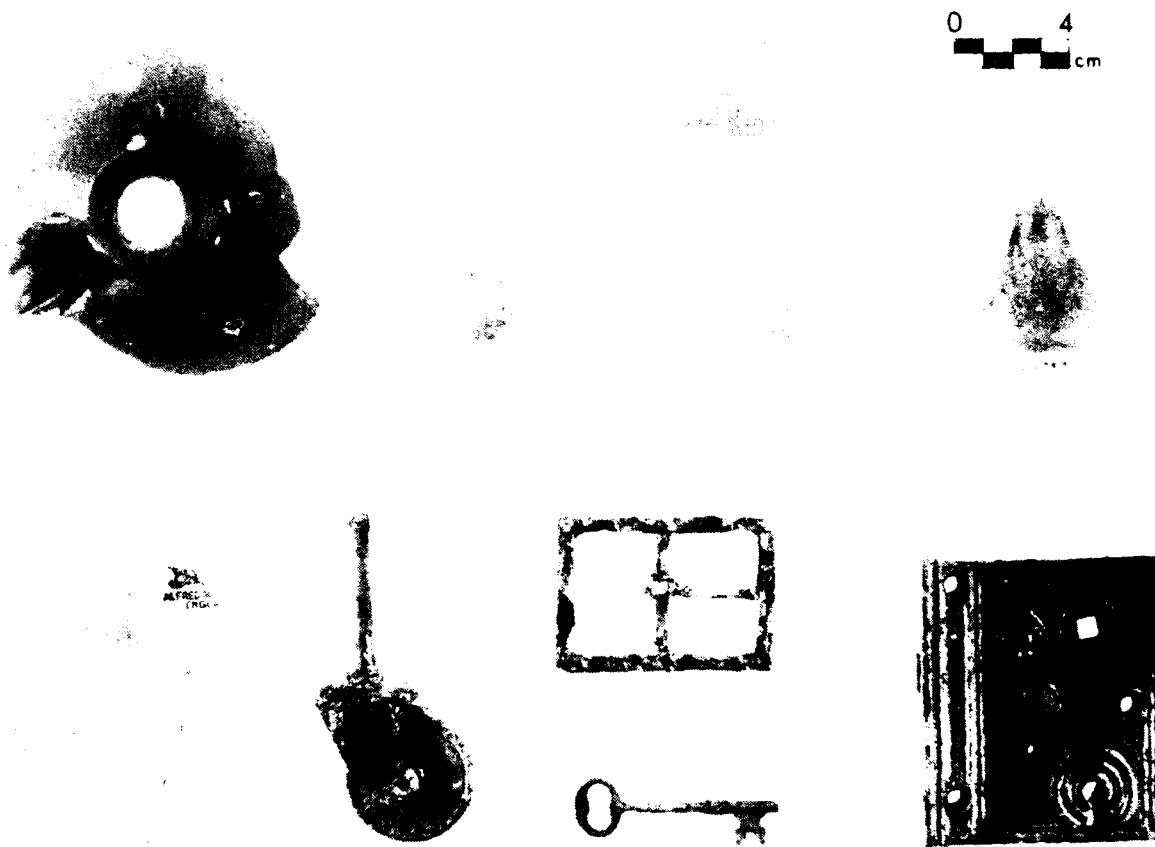


Figure 5. Examples of artifacts found in the midden deposits around nineteenth century farmhouses. From left to right: upper row — stoneware jug neck, medicine vial, bottle neck perfume bottle; bottom row — ironstone plate sherd, furniture caster, harness buckle, iron key, and door handle plate.

and manicured grass lawn, the traditional yard contained many areas of bare earth crisscrossed by paths between weeds and small brush. The inner portion of the yard would receive the closest attention to what we would consider yard maintenance today, and may have been periodically swept for practical as well as aesthetic reasons. The distribution of artifacts around the old Penn farmhouse indicated that yard sweeping was conducted around this dwelling.

One direct consequence of the many outside

activities conducted in the traditional yard was the *midden* of artifacts left behind for the archaeologist to recover. Over the years, many of the sherds of glass, pottery, metal, and other materials have been worked into the soil to become buried up to a foot or two below the surface. Trampling by both humans and animals along with the actions of rain, frost, and large and small burrowing animals have helped to turn the soil and bury most artifacts. Through careful excavation and the trained eyes of the archaeologists, artifacts can be recovered to

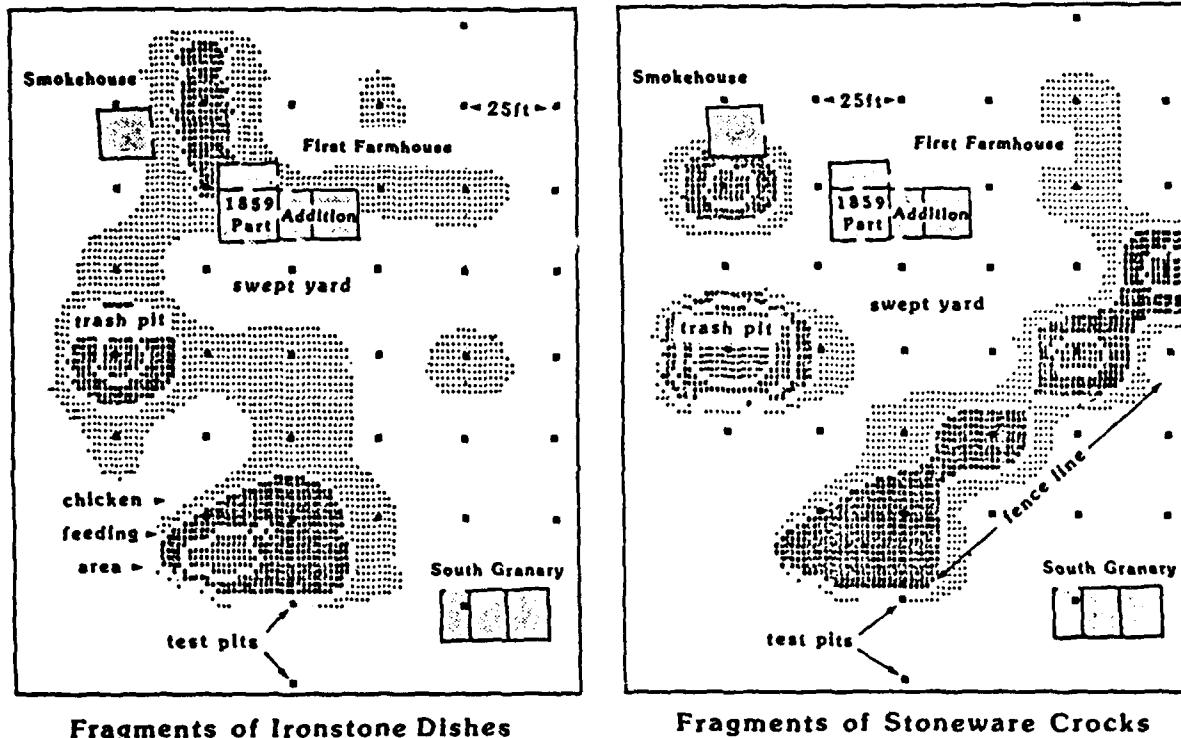


Figure 6. The yard around the oldest Penn farmhouse illustrates the kinds of information recoverable through archaeology. Computer generated maps show the distributions of two kinds of pottery fragments. Ironstone was used for table settings while stoneware was generally used for food preparation (churns) and storage (crock, jugs).

provide a physical picture of the layout of the yard (Figure 6).

These artifact rich middens are as important for studying some segments of the past as are historical diaries, photographs, and documents. From these deposits, we are learning about many of the more common activities and objects that were too commonplace to be recorded at the time. While much has been written about the wealthier upper classes, urban dwellers, or rugged pioneers of the nineteenth century, far less has been documented about the typical rural farmer, his farmstead, possessions, and family activities. The archaeological record provides detailed insights for common yet unrecorded items, such as the table dishes and kitchen containers owned, kinds of glass, metal tools, buttons and personal items worn, and even the types of animal

meats and plant food eaten. Much more important evidence of some daily activities and rural practices are subtly awaiting the trained eye of the historical archaeologist to identify and interpret for others. For example, evidence of the techniques and implements used to butcher a cow are still recorded on some excavated bones (Figure 7). The scratches and wear marks on a dish tell us of the amount of use it received, as well as, the kinds of storage methods used for it between meals. The duplication of patterns of glass and ceramic vessels provide some direct information on the personal tastes, wealth, and current fashions of the family from which they were discarded. Even the scattered fragments of household items around the farmhouse convey family information about activities and practices of the past.

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in rural landscapes, initial settlements and communities, foodways, oral history, tree-ring information, and artifacts.

Rural Architecture 1850 to 1920



Figure 7. Cow and pig bones showing butchering methods: (a) sawn, (b) chopped and split.

In summary, the research design organized for the archaeological investigations of historic farmsteads in the Joe Pool Lake project area focused on the nature of the middens associated with the farmhouses, the former resident's material possessions, and the layout of the farmstead based on the deposits of artifacts, structures, and features. Investigations also took into account the types of buildings associated with the farms, their locations, size, and specific techniques of construction. Using all of the available kinds of archaeological, historical, and architectural information, the resulting studies not only concentrated on the particular National Register significance of each farmstead, but also the scientific, historical, and humanistic merits of the sites and their contents. Some of the more notable results of these investigations are reviewed in the following section.

INSIGHTS INTO THE HISTORIC PAST

Historic sites in the Joe Pool Lake Project area revealed some very unexpected results, along with the anticipated wealth of artifactual information. The following subsections review our findings by major topics of interest: rural architecture, notable changes

We often picture many of the dwellings and barns of Texas frontiersmen as having been constructed from hand shaped (hewn) logs. One of the most interesting insights we gained from studying the architecture in the Mountain Creek area was a recognition of the early occurrence of buildings made from sawn lumber. It had been our firm conviction that most early residences would have been constructed of log rather than sawn lumber for the 1850 to 1870 period. Exceptions, of course, would have occurred among only the wealthiest of families. The old Penn farmhouse (41DL192) and the Lloyd house (41TR39), both still standing today, are physical evidence that sawn lumber was used by some of the middle class before 1860. In our investigations around the greater Mountain Creek area, we identified several other early houses constructed of sawn lumber and dating between 1849 and 1860. These examples have demonstrated that many of the initial homes and farm buildings were constructed of *hewn* or sawn wood using *mortises* and *tenons* to join wall posts and sills together. The clapboard siding used on them was frequently brought in by wagon from mill operations in East Texas. By using tree-rings and the science of *dendrochronology*, we have determined the precise year that many trees were cut to construct a building, verifying the co-existence of sawn and hewn buildings.

The Penn Farm (41DL192), for example, contains log and hewn *timber frame* dwellings and *outbuildings* that are representative of the types of buildings generally found in North Central Texas. The major barn on this site was built in the late 1850s from over 80 red cedar trees cut over a two year time span. The structure is a horizontal log *double crib* barn capable of storing grain and sheltering animals. A frame granary (Figure 8) was also built at the same time using red cedar trees from the same forest stand. The earliest Penn dwelling (Figure 9), a modest hewn timber frame house built in 1859, was constructed of trees that had been cut from a different forest than the barns. Tree-rings

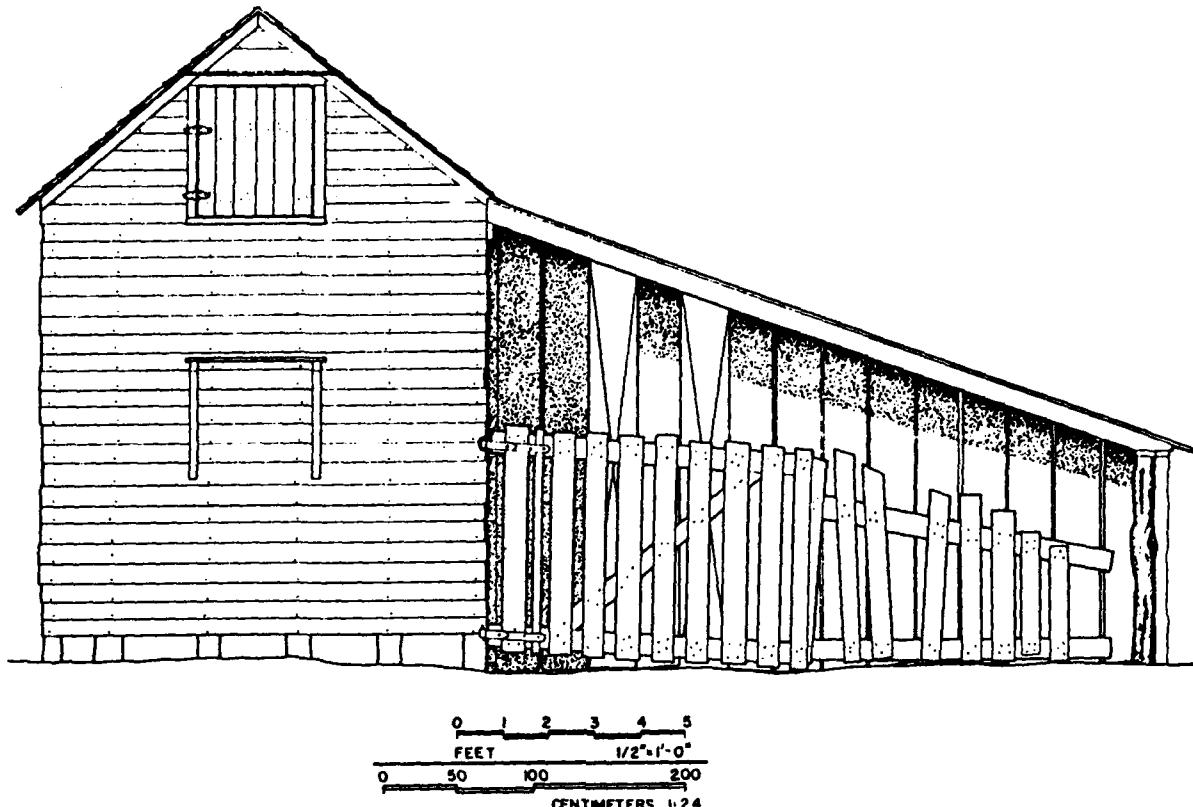


Figure 8. Historic American Building Survey (HABS) drawing of the North granary at the Penn site (41DL192) compiled by Will Alexander (1983).

indicate that a second granary was cut from a floodplain oak forest in April 1874, probably the product of a local sawmill. The main Penn house, built in 1876, was constructed from large pine timbers cut from East Texas forests and shipped by railroad. During the twentieth century, all lumber used in construction was commercial pine lumber purchased from local lumberyards.

The architectural forms of houses in the Joe Pool Lake area were diverse, but the main type used by wealthy landowners was the *central hall*. Single story, story and a half, and two stories were present. Houses of smaller landowners and tenants were simpler two room dwellings. The average room dimensions of a house provide a general measuring stick of the affluence of their owner-builders. At the upper end of the social scale is the Anderson

family's plantation house on site 41DL190. Constructed in 1887, it was an impressive two story house containing 14 rooms that was destroyed by a fire in the 1940s. Based on the dimensions of its burned remains, its rooms averaged about 20 by 20 feet. In comparison to the average room size for a Joe Pool Lake dwelling, the Anderson plantation house rooms were 50% larger.

Most Joe Pool Lake dwellings contained rooms averaging about 16 or 17 ft. square. The dwellings at the Pool and the Marrs tenant sites contained the smallest average room sizes (14 by 14 ft. averages) and these sites also ranked near the lower end of the economic scale. Still, however, their occupants were not poor and their families lived a lifestyle above the average Texan household of the time.

Architecture represents one kind of tangible

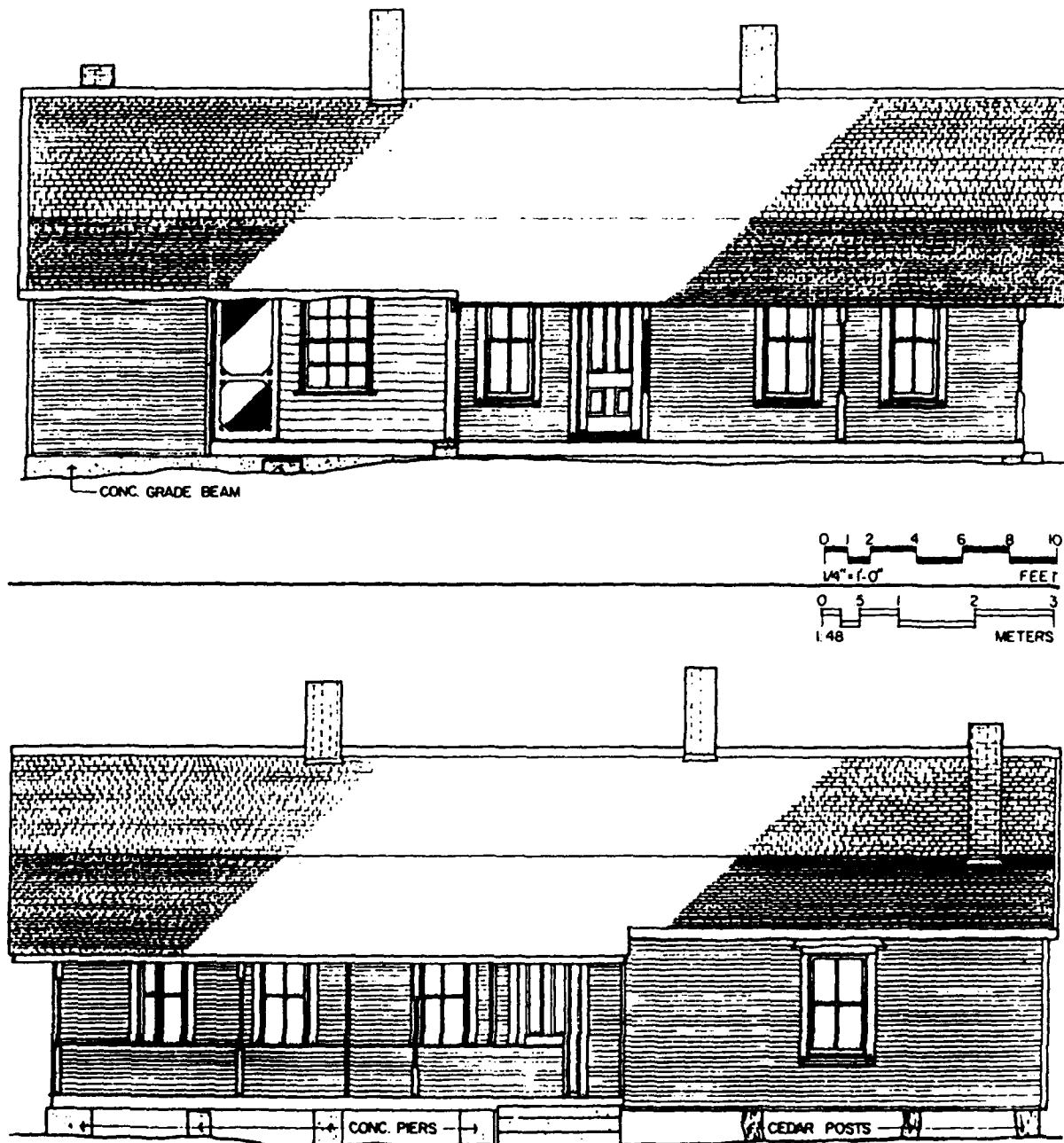


Figure 9. HABS drawings of the Penn Farmhouse showing the original 1859 structure and its additions.
Compiled by Tom Shaw (1982).



Figure 10. The Bowman-Sprinkle house was built around 1915. The dwelling retains a number of late Victorian architectural elements and embellishments including the gingerbread spindle-work in its gables. One would not have predicted that beneath its exterior siding was a frame made up of several recycled buildings and many odd pieces of used lumber. (Courtesy of Marion Loyd and taken from Ferring and Reese 1982:142).

evidence that we can use to study the past. The Joe Pool Lake dwellings revealed that the Mountain Creek area contained a rural population that stayed closely abreast of the major social changes spreading through urban areas and more densely settled portions of the northern and eastern United States. The Bowman-Sprinkle house, for example, illustrates the mainstream participation of rural Mountain Creek (Figure 10). The house contains many Victorian elements in its layout and construction. It combines Victorian (picket fence trim and diagonal flat stick work in its gables), Queen Anne (spindle work gingerbread in its gables, free classic porch columns, and bay windows) and simple folk characteristics (symmetrical south face and floor plan, moderate roof pitch, and a sloping skirt protecting the lower foundation). The house was built in 1907 and it presents a late Victorian appearance more typical of town residences rather than rural farm workers. Interior elements such as elaborate molding and bull's eye motifs matched some of the period details found in upper middle class urban houses constructed in Dallas' lower

Swiss Avenue District by Frederich P. Wilson between 1890 and 1902.

The Bowman-Sprinkle house, although presenting an outward appearance of stylish and popular designs revealed an incongruence in its interior construction. Unlike urban residences constructed at the turn-of-the-century, the Bowman-Sprinkle house revealed an inner frame of reused beams and wall boards from several older buildings. This conservation of wood materials seems to contrast greatly with the outward Victorian appearance and elaborate decorative embellishments. Furthermore, architectural investigations indicated that the house may have been constructed in several phases over a five year period as indicated by oral recollections. The house represents a well balanced mixing of traditional rural conservation and modest urban late Victorian architectural fashion.

Images of the Rural Landscape

The vegetation and landscape today is considerably different than it was when the earliest pioneers first came to the Mountain Creek region. As one drives through the Joe Pool Lake area today, one usually notices the thick growth of mesquite trees and other scrub brush choking once open farmlands. Stories told by some local senior residents concerning these changes seemed more like fiction than fact, until they were verified by early surveyors' records housed in the General Land Office in Austin. Lovell Penn recalled the story his Uncle Andy (1876-1964) used to tell him about the old days. Andy Penn remembered the days when he could "get on a horse and ride from his homeplace [site 41DL192] clear to Fort Worth, just cut across the country. It was all open prairie...the grass was way up there that high, no mesquite trees or anything but grass".

The fencing of the prairies with the newly invented barbed wire in the 1870s and 1880s and improvements in plows for tough prairie soils contributed greatly to changing the landscape. Saw mills cut the virgin forests along many of the streams and the Cross Timbers also fell victim to their blades. Suppression of nature's and man's prairie fires which produced fertile soils, and finally

⁵ Lovell Penn in interview conducted by Wilson Dolman (Texas Parks and Wildlife) on October 27, 1977.

Scientific Study of the Human Past

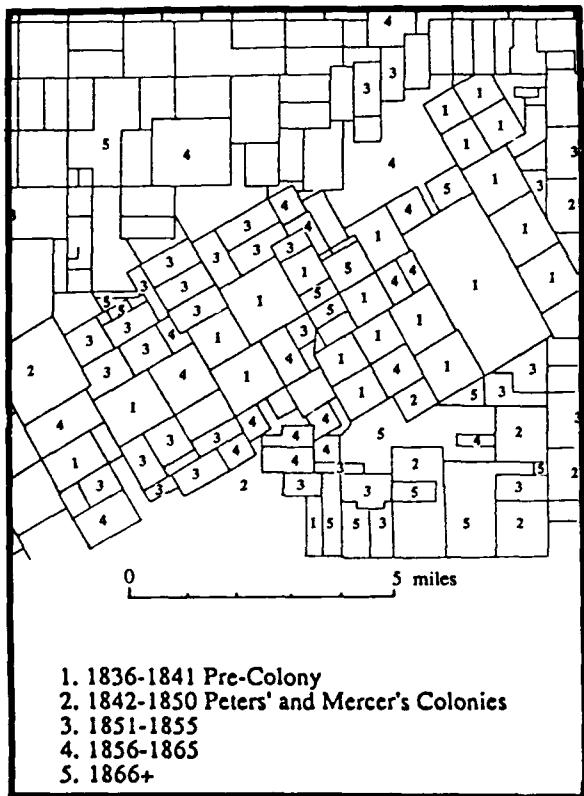


Figure 11. General Land Office surveys in the Mountain Creek area by period of settlement. Tracts outside the study area not numbered.

the abandonment of many agricultural systems in the second quarter of this century led to a landscape considerably different today than 130 years ago.

In a very few areas, some undisturbed vegetation has been by-passed by most of these events. A few remnants of undisturbed prairie will be protected in the Joe Pool Lake parklands. Early settlers, such as the Penns, Andersons, Loyds, and Rapes took advantage of these small natural prairies. Without any initial preparation, these prairies offered feed for livestock and required little maintenance. Our research of early land records supported the proposition that the Penn and Anderson families settled on the edge of the Mountain Creek escarpment specifically to take advantage of small, upland prairie patches away from flood prone bottomlands and the larger, more open

"grand prairies". Guidebooks and entrepreneurs writing to attract new settlers noted the good mixture of bottomland forests and prairies in North Central Texas. Edward Smith, for example, who published a guidebook in 1848 covering his travels through North and East Texas noted that a settler should choose a location well away from the "midst of a great prairie...[because] stock water is not very plentiful; wood is scarce...and shade is absent" in those areas. Instead, one should locate on the "edge of a wood, where there is good timber...and not far distant from small water courses"⁶.

Our research into records of the General Land Office (GLO) in Austin supports Edwards' recommendations. The earliest land tracts surveyed and patented in the Joe Pool Lake area were usually located along Mountain Creek (Figure 11). These GLO records also contain a wealth of information on the vegetation of the area before settlement, land clearing, and lumbering disrupted the natural order of the area. The corners of each tract of land contain a description of the trees used as witnesses to mark the boundary point. The species, diameter, and distances were noted so that they could be used to document the survey point. When prairies or open spaces were encountered, these notes clearly document the fact by indicating the great distances or other features required to set the survey point. Through these records, we have been able to collect a picture of the native vegetation and landscape before it was radically altered by development.

The records of the early surveyors indicate that prairies comprised 60% of the landscape, but brushy trees were often scattered in prairie areas. The Mountain Creek valley contained hoghollow (heavy clay soil) prairies with scattered mesquite trees. Apparently the spread of mesquite was limited by the native vegetation and fire until plowing and grazing altered the natural balance. The *Eastern Cross Timbers* were 10 miles west, but a lobe of post oak forest extended down Walnut Creek into the reservoir. The cedar ridge forest was much smaller than today, concentrated in a 10 square mile area around Cedar Hill. All of this information has allowed us to better understand what was available for the frontiersmen to use for their buildings, cattle, and families.

⁶Edward Smith Account of Journey through North East Texas (London 1848) as taken from Michael V. Hazel (1985:6) article.

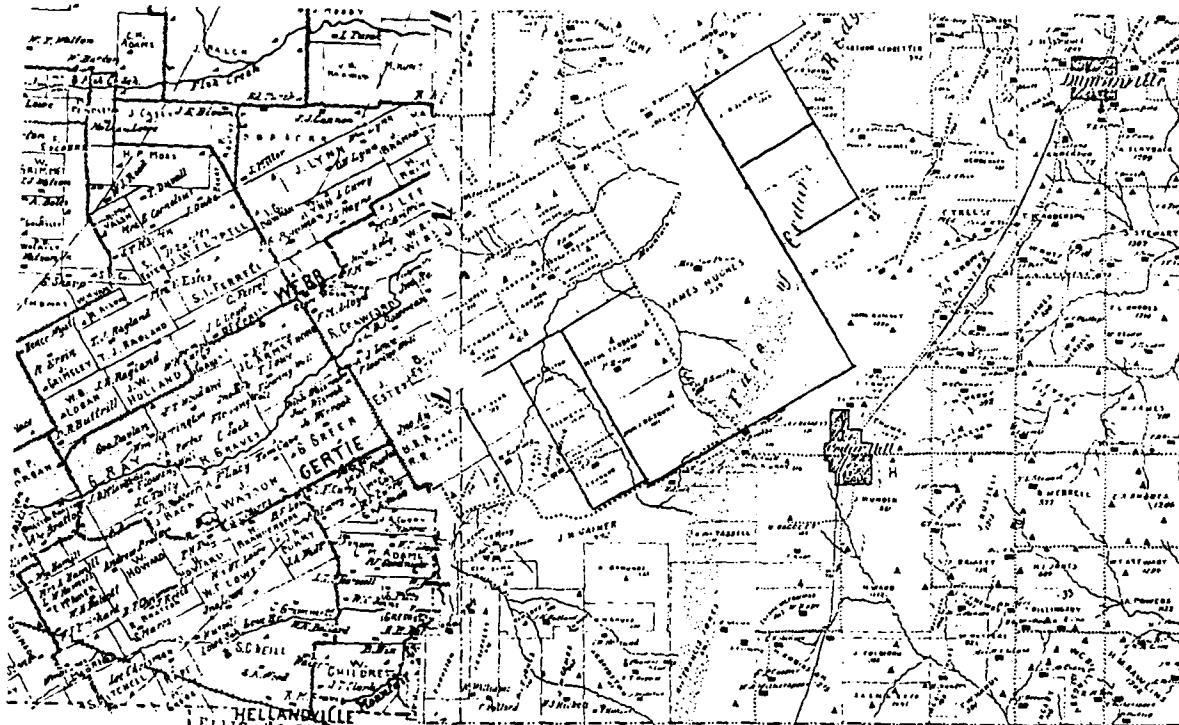


Figure 12. Portions of the Dallas County (1900) and Tarrant County (1895) Sam Street Maps showing turn-of-the-century settlements and road systems. Names listed denote landowner residences.

Early Settlement and Communities

The first land tracts surveyed in the Joe Pool area were prime lands along major streams (Figure 11). A group of tracts was surveyed along Mountain Creek in the early 1840s. When Texans implemented a plan to build their treasury, they allowed the Peters Colony to administer land in the area. A form of surveying and land division was used where square parcels were arbitrarily surveyed despite the available resources. This practice angered the early settlers, who revolted and succeeded in getting the Texas Legislature to repeal the contract and revert to the earlier system of land grants in the 1850s. By the 1870s, all Public Domain had been granted and farmers and entrepreneurs were actively trading and selling land. In Texas, throughout the nineteenth century, land was the best form of currency.

The influence of these different survey divisions has been imprinted into the settlement pattern and

landscape of the Mountain Creek area and the greater Dallas-Fort Worth Metropolitan area. The orientations of many roads, town layouts, and even rural farmhouses have been dictated by the original surveys. Since many landowners did not desire newer roads cutting across their farmlands, the rural road system was established with right angled corners and property line roads that ran between adjacent owners. The influences of these factors are highly visible on the turn of the century Sam Street maps for Dallas and Tarrant Counties (Figure 12).

The Sam Street maps are rich archival documents because they locate and identify landholders' dwellings and also show the location of most tenant houses. Two cemeteries, located adjacent to the Joe Pool Lake, contain many individuals from residences shown on these early maps. By locating and studying the relationships of these buried individuals to their former residences, we have been able to reconstruct two distinct

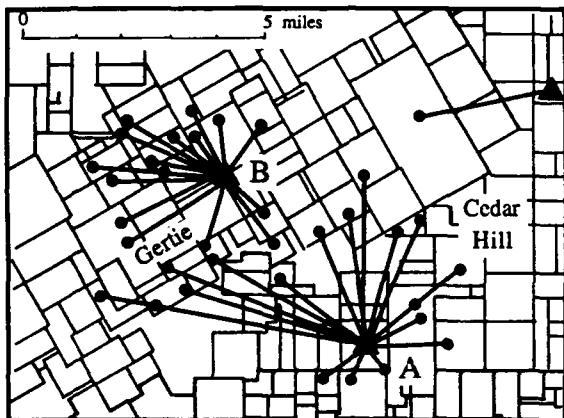


Figure 13. Communities reconstructed by relating names on the Sam Street Map to cemetery plots: (a) Pleasant Valley and (b) Estes Cemeteries.

communities across part of the Joe Pool Lake area (Figure 13). The largest community located on the Cedar Ridge escarpment was centered around Pleasant Valley Cemetery and School. The other was located on the prairie between Mountain and Walnut Creeks, centered around the Estes Cemetery, Friendship Church, and Gertie School. In interviews with local residents, we found it very difficult to reconstruct these same communities since different families retained very different perceptions depending on the time period recalled or personal relationships held. The reconstructed cemetery "communities" actually represent church related geographical areas rather than politically and socially cohesive units. It is unfortunate that many rural cemeteries are being vandalized since gravestones often represent some of the more easily retrievable personal data on former inhabitants of rural areas. In Dallas County, the Dallas City Planning Division in concert with the Historic Preservation League has recently begun a public campaign to draw attention to the important value of cemeteries and the great need to actively thwart vandalism.

Traditional Foodways

The artifacts and bone remains excavated from yards around the farmhouses contain specific information on the types of foods grown, purchased,

and eaten. Although the archaeological study of food remains provides evidence of only a few segments of foodway activities, it can never produce the rich insights and fine detail often found in written and oral history. But, when all of these records are combined, a richer, more complete understanding of past diet is possible.

Two results are worth mentioning in this regard. First, home canning using glass jars is a technique that has been around since 1860. Archaeological studies on over 30 rural farmsteads in the Richland Creek area 60 miles south of Dallas indicated that home canning by the typical farmer was not practiced to any large degree before 1910. Open smoking, curing, salting, and drying of foods (fruits, vegetables, meats, etc.) were usually the preferred method of preserving as opposed to the home canning method using glass jars or tin cans. Although informant after informant vouched that their family had practiced home canning for over 100 years, most archaeological evidence did not support these assertions. Furthermore, when an occasional informant or two dragged out an old fruit jar to prove the point, it generally dated to after 1890 or 1900 and added support to the absence of old jar fragments on nineteenth century sites.

In the Joe Pool Lake area, however, the practice of home canning appears to exist earlier than in more rural areas. The historic trash pit uncovered next to the old Penn house (41DL192) yielded fruit jar remains dating to the 1870s and 1880s, and discarded by 1895 (Figure 14). At several other sites, fragments of late nineteenth century fruit jars were also recovered. Two influences seem to contribute to this earlier occurrence of home canning. First, the old adage of "keeping up with the Jones'" seems to apply to the Mountain Creek area, and apparently home canning spread faster throughout this area as a result of influences from the major urban centers of Dallas and Fort Worth. A second factor that may have enhanced this early use of home canning was that many of the families who settled in the Mountain Creek area were from the Midwest and Upper South. Historical research has indicated that families from these areas relied on several crops, animals, and farming practices rather than placing all their energy in one crop, such as cotton. While these families did grow some cotton, also planted was wheat, corn, oats, and other grains. They also raised cattle,

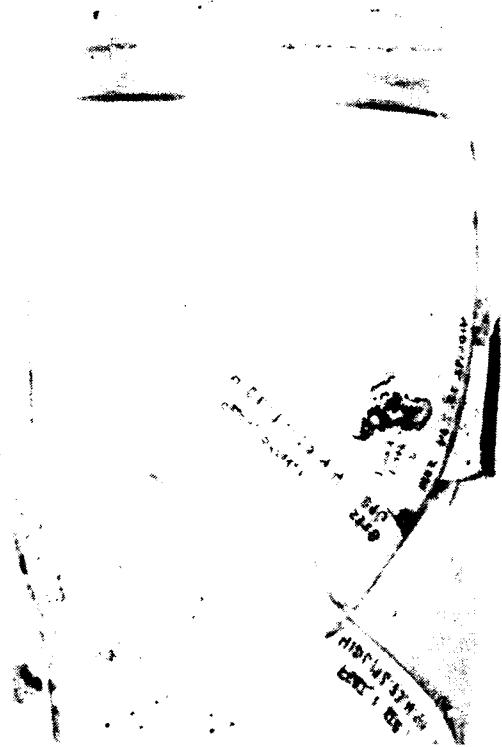


Figure 14. Glass fruit jar with a ground lip made in the 1880s and recovered from the fill of an abandoned cellar at the Penn farm.

horses, and other livestock. Unlike the Richland Creek households mentioned above, focusing mostly on cotton as a cash crop, Joe Pool Lake households started off with a philosophical advantage and were more open to experimenting with other foods and food technologies.

The bones of animals consumed for food are also frequently found. Over 1800 fragments were recovered in Joe Pool Lake excavations (Figure 15). The majority of these remains represent cattle and pigs. No deer bone was recognized among the species identified, but this was to be expected since there were no sites occupied earlier than 1859. Many of the sites dated after 1875. Settlers in North Central Texas quickly exterminated deer. These wild animals were scarce except for an occasional fleeting individual probably flushed out of the Trinity River bottom forests to the north.



Figure 15. Examples of animal bones recovered from Joe Pool Lake excavations: (a - b) pig, (c) now extinct passenger pigeon, (d) rabbit.

Cattle were a major source of meat since their bones were the most common *faunal* remains recovered in refuse deposits at Joe Pool Lake historic farmsteads. This is quite different from the traditional southern diet where pork dominates. Poultry, eaten on weekends and special occasions, were also common. On households of prominent landowners, prairie chickens and passenger pigeons were present indicating that these gentlemen farmers preferred fowling as a sporting leisure. Fish, turtles, shellfish, and ducks also indicate that people visited the Trinity River and lower Mountain Creek to supplement their diets. In all, over two dozen species of animals were represented in the *faunal* materials recovered from the historic sites. The passenger pigeon bones represent one species that did not make it beyond the 1920s.

Oral History

There is a wealth of information and rich

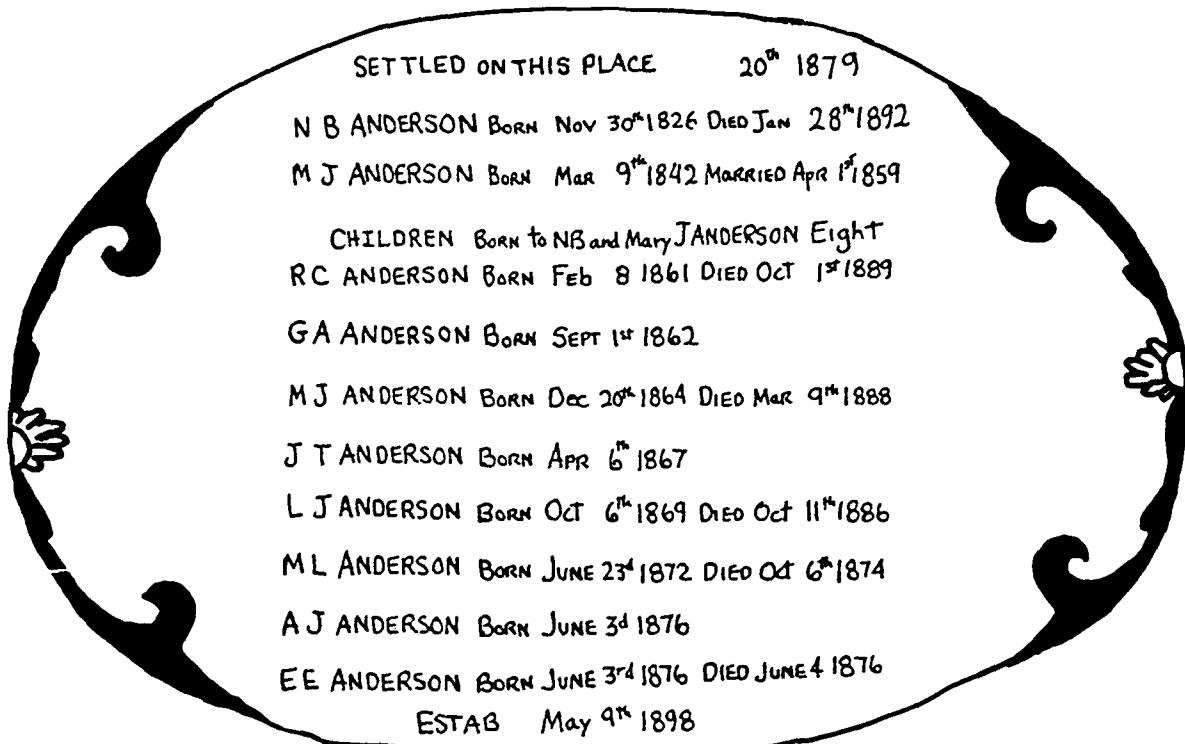


Figure 16. A partially reconstructed illustration of the genealogical information painted in 1898 on the inside of the Nancy and Napoleon B. Andersons' root cellar (41DL190).

folklore about the Mountain Creek area. Consequently, we had to limit our collection of information to specific sites and older lifeways. Let us briefly mention some of the major results. First, it is very important to understand that both word definitions and family practices have changed as newer generations have replaced older ones. The term "smokehouse" for example, conveys different meanings depending upon an individual's background. The "smokehouse" near the old Penn farmhouse, for example, has no characteristic evidence of blackening by fire. Consequently, it was considered to be an elaborate chicken house or rabbit hutch rather than a food drying/curing outbuilding. Not until Lou Penn identified it did we feel comfortable in calling it a smokehouse.

We have had similar experiences with informants who tell us about cisterns on their homesteads that seemed to vanish when we go out to

locate them. Not until question a little further, do we realize that they were referring to above ground cisterns and not dug ones. On other occasions we have grown wise to references of early houses being brought in from East Texas. Most often, these oral traditions refer to the pine clapboard siding being imported and not the full house. Much of our work with wood identification and dendrochronology has helped to reinforce these interpretations.

Last of all, we have occasionally been lucky to find some oral history actually recorded on site. The genealogy painted in the N. B. Anderson cellar, for example, provides a good illustration of documentary evidence of a family's oral traditions recorded in 1898 (Figure 16). It records the births, marriage, and deaths of the Napoleon Anderson family from 1826 to 1898. The Anderson cellar is an impressive structure constructed out of handmade brick, semi-pressed and fired in a local kiln. The John Wesley

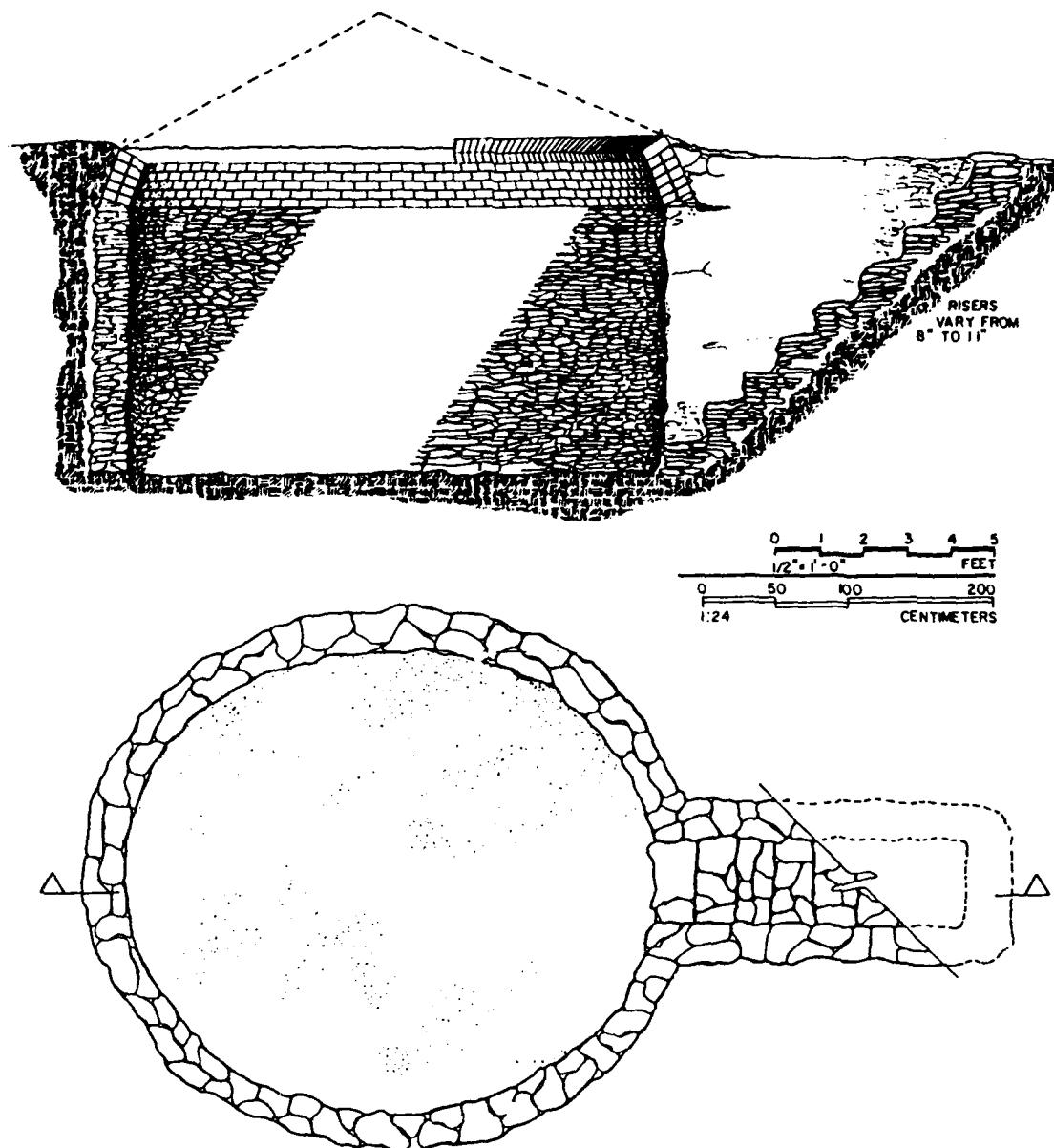


Figure 17. The J.W. Penn root cellar was constructed in the late nineteenth century. The cellar had a vaulted conical, brick ceiling. The Penn family immigrated to Texas in the 1850s from Sangamon County, Illinois. Drawing by Will Alexander (1983).

Penn cellar, constructed in about 1879, was also an impressive subterranean structure with a conical handmade brick roof (Figure 17). Both Anderson and

Penn immigrated to Texas from Sangamon County, Illinois, and both constructed major brick cellars for safety and storage.

Tree-ring Information

In addition to dating buildings, tree-rings provide useful information on past climate (Figure 18). Frost rings formed in oak trees when cold fronts, called "northerns," surged southward following mild, wet winters. Specimens collected from Joe Pool Lake indicate that particularly strong "northerns" happened in 1716, 1810, 1820, 1832, 1833, 1867, 1870, 1876, 1880, 1890, and 1923. Major dry periods occurred in the late 1870s and the early 1880s, and for eleven years surrounding 1900.

Artifacts

Over ten thousand artifacts were recovered from historic site excavations in the Joe Pool Lake area. Glass and ceramic vessels account for about one third of these remains. Whole bottles dating from the nineteenth century, like the medicine bottle illustrated in Figure 19, were extremely rare. Most often, bottles were discarded only after they were broken. Bottle dumps like the ones often associated with mid-twentieth century farmsteads were not encountered on older sites. The level of consumption was not high enough before 1900 to necessitate the need for special family dumps to discard unwanted glass.

The broken fragments of ceramic dishes and plates were generally from undecorated white ironstone tableware. Unlike the first half of the nineteenth century, these later dishes were very plain and characterized the sparkling cleanliness associated with the Victorian period. On a few sites, fragments of brown or blue decorated transfer printed dishes were recovered (Figure 19). These were reminiscent of the earlier wares and may have been family heirlooms accidentally broken.

Architectural remains were also very common among the artifacts recovered. The nineteenth century bricks represented were not the usual crude handmade varieties commonly found in rural areas, but were well formed, semipressed, mass produced varieties probably made at one of several Dallas brick plants. These fragments once again underscored the influence exerted on the rural families by urban Dallas. Like many of the other differences noted in the artifact assemblages, these bricks indicated mainstream influences on the local area.



Figure 18. Tree-ring growth representing over a century of time and illustrating cyclic patterns in moisture and rain fall. This section was cut from a pier in the Reitz barn (41TR45).

Metal items were also recovered. Architectural hardware such as hinges and nails, stove parts, and tools were most common (Figures 5 and 20). A commemorative pin from the 1908 Reunion of Freemasons is indicative of some of the social activities of former residents of the Joe Pool area.

PREHISTORIC RESEARCH DESIGN

The investigations of the archaeological remains left behind by human groups living in the Joe Pool Lake area before the earliest American pioneers were designed to study the relationships between the culture of prehistoric man and his natural environment. These investigations were focused on reconstructing the prehistoric environment. They also focused on integrating archaeological data on prehistoric technology, social organization, population density, and methods of food gathering or production with environmental data so that we may begin to understand why prehistoric societies



Figure 19. Examples of decorated nineteenth century ceramic tablewares (ironstone plates) and a nineteenth century medicine bottle excavated from Joe Pool Lake sites. Most ceramic tablewares, however, were plain white ironstone typical of Victorian farming households in Texas: (a) brown transfer printed, (b) brown transfer with polychrome highlighting, (c) purple transfer with green highlighting, (d) patent medicine bottle.

developed as they did. Of course this requires the efforts of scientists from many fields. The study of the landscape and vegetation before written history requires the expertise of *geologists*, *botanists*, *ecologists*, *soil scientists*, and *palynologists*. When the earliest American Indians came to North Texas some 12,000 years ago the climate was much colder than today. Over the many centuries since, the climate has changed, resulting in shifts in the kinds of plants and animals that depend on particular rainfall patterns and temperatures. Different climatic conditions affect types of vegetation which will thrive and the plants themselves leave behind traces of these changes in their preserved pollen. The formation of landforms also provides information on climates and living conditions of the past. It is necessary to understand these differences to begin to understand the complex story of human prehistory.

Our understanding of prehistoric people and how they lived depends upon the excavation and analysis of archaeological sites. Through excavation, we can recognize the remains of former activities (food preparation and cooking, tool production, pottery

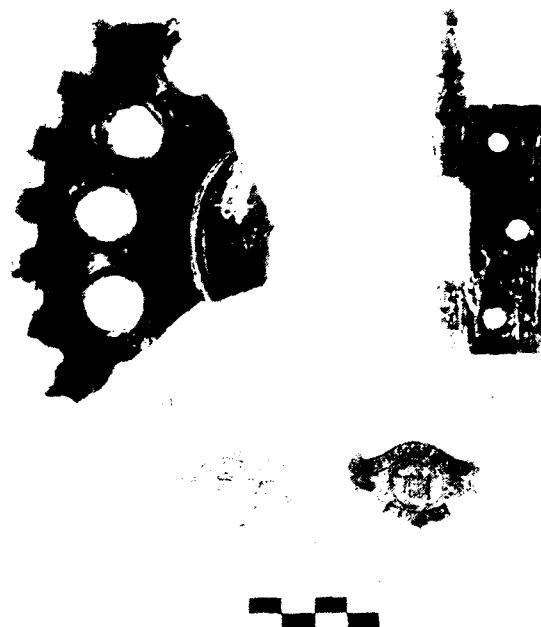
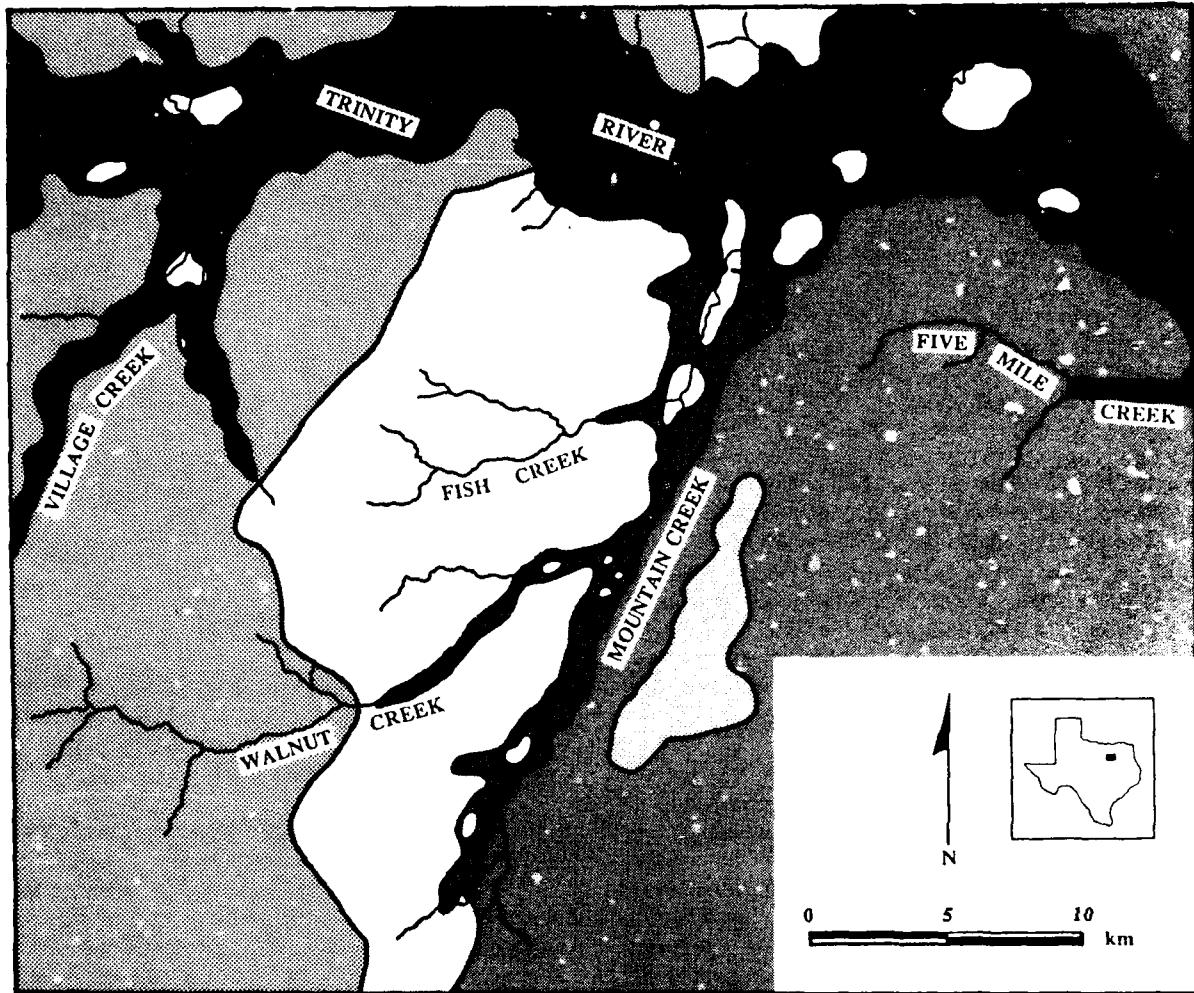


Figure 20. Examples of metal items excavated from Joe Pool Lake historic sites: (a) plate from corn grinder, (b) decorated door hinge, (c) stamped reunion badge dated 1908.

production, etc.) and can relate these remains to the broader fabric of human advancement. Why some cultures developed agriculture or the wheel and others did not is a very basic and important question. An understanding of prehistoric *subsistence economy* depends upon the recovery of animal and plant remains from archaeological sites. These remains are recovered by special collection techniques and their analysis depends upon the expertise of *botanists* and *zoologists*. The archaeologist attempts to interrelate all of the information to understand not only what prehistoric people were doing in areas such as the Mountain Creek drainage, but also why they chose a particular lifestyle.

The use of the Mountain Creek area by prehistoric peoples is interesting, for there are few prehistoric sites known within this valley. Furthermore, there are very few artifacts found on these sites in comparison with other prehistoric sites in North Central Texas. Why prehistoric peoples did not use



■ Eastern Cross Timbers	■ Bottomland Prairie
□ Grand Prairie	■ Brushy Prairie
■ Mountain Creek Floodplain Forest	■ Cedar Ridge
■ Trinity River Floodplain Forest	

Figure 21. Habitat zones surrounding the Mountain Creek drainage.

the Mountain Creek drainage more often was one of the questions to be answered by the archaeological investigations. Of course, one answer might be that Mountain Creek did not offer the abundance of food

resources that surrounding areas provided. Nevertheless, such a conclusion needed to be demonstrated.

Soils were collected for detailed analyses to see if any plant pollen or burned seeds were present.

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Unfortunately, the conditions of the Mountain Creek soils were not suitable for pollen preservation. The General Land Office survey records provided data for the reconstruction of the distribution of plant communities as they existed just prior to the pioneer settlement of the 1850s. These records revealed that the Mountain Creek area consisted primarily of open prairie areas, narrow forests along streams, and a cedar forest on the White Rock Escarpment (Figure 21). Both the prairie areas and the cedar forest were dominated by wild plants of little economic importance to prehistoric man. The low density of trees in the prairie areas limited the amount of fruit and nut resources that could be gathered by prehistoric people. Although the prairie grasses provide forage for grazing animals such as antelope and bison, neither was abundant in the area until after A.D. 1400. In other portions of the Upper Trinity River our studies revealed the presence of a wider variety of food resources which would have attracted prehistoric hunter/gatherers and the animals they hunted. Consequently, it is apparent that the Mountain Creek drainage may not have provided sufficient food resources for a long term occupation by one or more prehistoric groups.

The absence of suitable rocks for making stone tools may also have made the Mountain Creek valley less attractive to Indians. While gravel *outcrops* provide numerous cobbles for tool production throughout much of the North Central Texas region, particular areas such as the Mountain Creek drainage lacked such stone. Consequently, the chipped stone tools found in the Joe Pool Lake sites generally had to be carried in from outside the Mountain Creek drainage. The probable sources of these rocks were the gravels located along the divide between the Trinity and Brazos River basins (Figure 22). Throughout the time periods represented by the Joe Pool Lake sites, the prehistoric inhabitants favored the *cheri* (flint) gravels of these rivers rather than the *quartzite* cobbles which were available from closer rivers to the north (Figure 22). This scarcity caused the prehistoric people to be conservative in their use of stone tools. Each arrowhead or knife was often sharpened time and again before it was discarded. Furthermore, the production of tools to replace worn ones was limited. The local scarcity therefore limited the number of worn out tools and fragments discarded at a site. Where such resources were available,

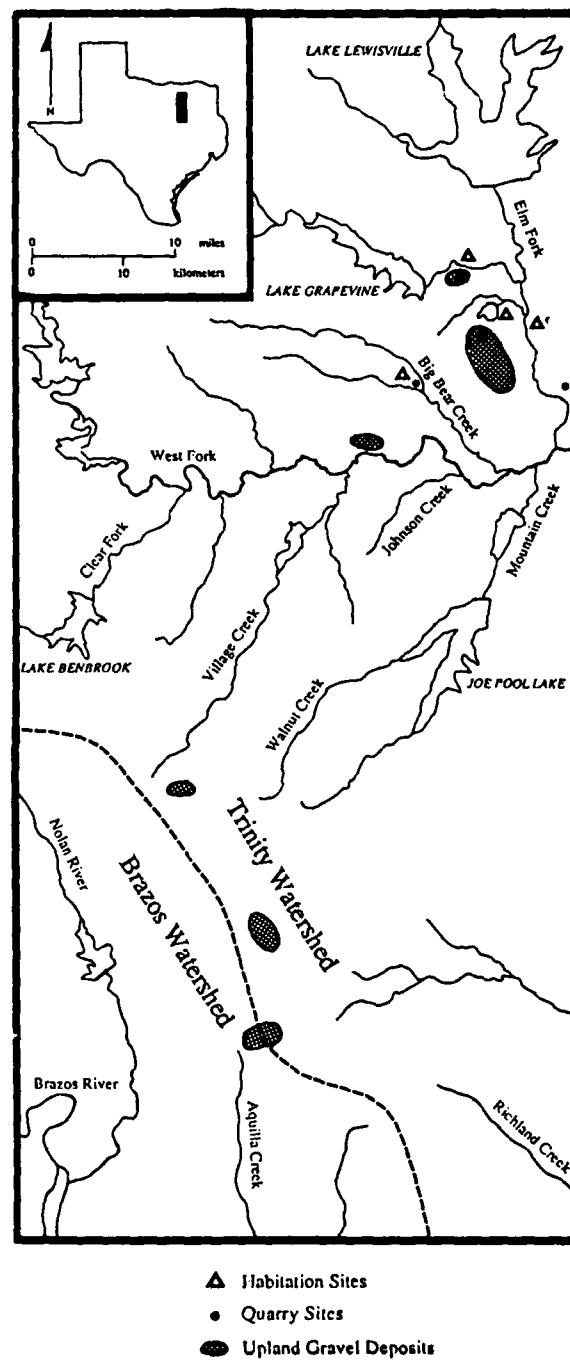


Figure 22. Distribution of known lithic sources in the region surrounding Joe Pool Lake.

tools could be discarded and easily replaced.

A second research question addressed by the Joe Pool Lake investigations concerns the original home territory of the people living in the Mountain Creek area. This question also addresses the direction of influence by outside groups on the local natives. For example, during the Late Archaic period (1,000 B.C. - A.D. 700) it had been suggested that people living along Mountain Creek normally inhabited the Brazos River valley and visited Mountain Creek only during specific seasons⁷. During the Late Prehistoric period (A.D. 700 - 1600), the inhabitants of the Mountain Creek area were thought to be from the *Caddoan* peoples living further to the east. The types of stone used for making stone tools and the decorative designs impressed on clay pots supported both of these initial interpretations. The following sections will discuss the lifestyles of the inhabitants of the Mountain Creek drainage, how these prehistoric people adapted to changes in climate and sources of food, and with whom they exchanged ideas and material possessions. The discussion follows three major time periods starting with the earliest occupations.

INSIGHTS INTO THE PREHISTORIC PAST

At a very general level, archaeologists have divided the 12,000 years of North Central Texas prehistory into three major periods: Paleo-Indian (10,000 - 6,000 B.C.), Archaic (6,000 B.C. - A.D. 700), and Late Prehistoric (A.D. 700 - 1700). These periods correspond to major levels of cultural and technological development, or human adaptation. They provide a broad framework for looking at many centuries of prehistory from the earliest demonstrated human occupation forward.

Paleo-Indian Period — (10,000 to 6,000 B.C.)

Although there is no direct evidence of the earliest inhabitants of North America within the Joe

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Pool Lake study area, the easily recognized, chipped stone, spear points used by the Paleo-Indians have been collected within the Upper Trinity River drainage of North Central Texas. The Clovis and Folsom points are the most distinctive artifacts left behind by hunters between 9,500 and 8,000 B.C. (Figure 23-a, b). The *flutes* (long flake scars) on the bases of these points likely aided the lashing of the points to the spear shaft. The association of these spear points with the remains of mammoth, giant bison, and other now extinct animals in southwestern sites led to the portrayal of these people as "Big Game Hunters." Recent studies suggest that such kills may have been infrequent and that plant food collecting and hunting of smaller mammals provided the bulk of their diet.

A warming of the climate and the northward retreat of the glaciers affected the plant and animal resources available to these people between 8,000 and 6,000 B.C. As conditions became warmer and drier, the forests of spruce and fir gave way to more open hardwood forests and grasslands. The latter portion of the Paleo-Indian period is distinguished by the presence of spear points with a slightly different technology known by archaeologists as *parallel flaking* (Figure 23-c,d). A spear point from this period was recovered from the Cobb-Pool site at Joe Pool Lake. The absence of other artifacts belonging to this early period suggests that this particular spear point was lost by an early hunter passing through the Mountain Creek area. The Field Ranch site, located in the Upper Elm Fork drainage, has also yielded several Paleo-Indian spear points including Clovis, Folsom, Plainview, and Hell Gap specimens (Figure 23). All of these specimens were collected from an eroded land surface.

The most significant Paleo-Indian site in the Upper Trinity River drainage is the Lewisville site which was exposed in a borrow pit during the construction of Lake Lewisville in the late 1950's. A series of burned clay patches which contained *Pleistocene* (Ice Age) animal remains were interpreted as cooking hearths. One of these clay features contained a Clovis spear point and carbonized organic material that was *radiocarbon* dated to greater than 37,000 years ago. Because Clovis points have consistently dated to around 10,000 B.C. at other sites in North America, the Lewisville find generated

⁷Skinner, S.A. and D.T. Coonors, *Archaeological Investigation at Lakeview Lake*. Archaeology Research Program, Research Report 118, Southern Methodist University, Dallas, 1979:51.

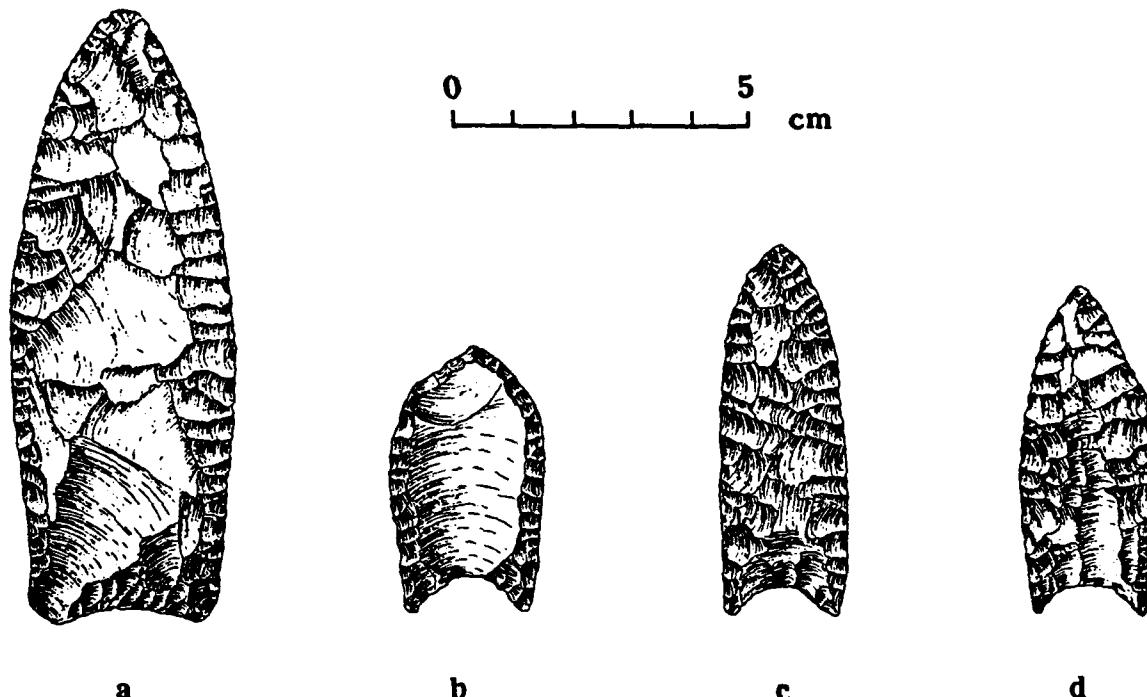


Figure 23. Paleo-Indian Projectile Points: (a) Clovis, (b), Folsom, (c - d) Plainview (all from Turner and Hester 1985).

a considerable amount of controversy. Additional investigations at the site in 1979 provided an explanation for the older than expected date. Contamination from much older organic matter (probably lignite or soft coal which contains ancient carbon) in the burned area was apparently responsible for the early dates.

The combined effects of the nomadic lifestyle of Paleo-Indians and 10,000 years of either erosion or deep burial of their sites by flooding and soil development have not preserved many sites that can be readily studied. Paleo-Indian groups, comprised of two to five families, likely moved frequently as natural resources within a day's walk from their camp dwindled. As a consequence, territories roamed by these people may have been quite large. The small *assemblages* of tools and refuse left behind are not easily detected thousands of years later. Many of these earliest sites have been either altered by erosion or buried beneath many feet of flood deposits.

Archaic Period — (6,000 B.C. to A.D. 700)

Since the vast North American continent provided large areas for small groups of highly mobile people, there was little competition for land and food resources. As a result, human populations grew steadily over thousands of years. This increase in numbers of people is readily apparent in the archaeological record. The number of known Archaic period sites is striking in contrast to the few known sites of the Paleo-Indian period. With increased populations came certain drawbacks. Free movement of people across large *territories* became more restricted and the use of plant resources and small mammals was intensified. Efficient use of the restricted territories was accomplished through the seasonal movement of people to harvest locally available foods as they ripened. During the fall, for example, several groups may have come together along a major stream to gather acorns and hunt deer.

and turkeys. Such gatherings also provided the opportunity for trading, courtship, and the maintenance of important social friendships. In the spring and summer, individual groups likely moved to areas where roots, berries, fish, and clams could be easily gathered. The repeated occupation of specific areas on a temporary basis, but over thousands of years, has resulted in *midden* deposits, or accumulations of refuse, which are easily detected by archaeologists.

The earliest portion of the Archaic period is poorly known for sites are frequently buried beneath several feet of flood deposits. Sites eroding from terraces have yielded food grinding stones, stone "sinkers" (probably weights for nets), gouges for woodworking, and scrapers for softening hides (Figure 24-c). Large spear points with stemmed bases are characteristic. During the latter portion of the Archaic period, stone "sinkers" and gouges no longer were a part of the tool assemblage. Although the climate was likely getting drier and the prairie areas were expanding at the expense of the forests, the sites from the Joe Pool Lake area indicate the continued use of river (catfish, clams, turtles) and woodland (deer, rabbit, turkey) resources. Antelope, prairie chicken, and jack rabbit were also eaten but in much lesser amounts.

Late Archaic (600 B.C. to A.D. 700) sites within the Joe Pool Lake area represent the repeated use of hunting and gathering camp localities over hundreds of years. The lack of formal features, such as cooking hearths and storage pits, at some of the Late Archaic sites suggests that the use of a particular camp was relatively short (less than one month). Even the sites yielding a greater number of features and artifacts were likely occupied for periods of less than two months. The large quantities of burned rock within these sites and the presence of filled pits suggests that heated rocks were used either for stone boiling or as a heat source for pit baking ovens. The prairie turnip (*Psoralea*) was one of the foods which was roasted within these pits.

The plant and animal foods used by the Late Archaic occupants of Mountain Creek indicate that the valley was used primarily during the late spring and summer months. Prehistoric hunters and gatherers spent only a portion of their seasonal round within the valley itself. Occupations during other parts of the year may have been concentrated in

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the *Eastern Cross Timbers* where nut producing trees were more common, or within the Trinity River valley where other nuts and game would have been more abundant. The use of chert (flint) gravels as the primary raw material for their tools, however, suggests that these people did not spend much of their yearly occupation along the main stem of the Trinity River. Quartzite, which is available within the upland gravels along the Trinity River, was used infrequently by the Late Archaic people. Instead, they mainly used chert gravels found to the west along the Trinity-Brazos River divide. The home territory of these people was likely to the west along the West Fork of the Trinity River.

The *interaction sphere* or social friendship distance of these people, however, extended beyond the North Central Texas region. The recovery of an ocean shell bead (Figure 24-e) and a *gorget* from Late Archaic contexts indicates that the prehistoric occupants of the Joe Pool Lake area traded with groups that had access to goods produced or collected hundreds of miles away. Whether or not the Joe Pool Lake area occupants personally participated in the seasonal gatherings at selected sites in the Upper and Middle Trinity drainages is unclear. Some sites are distinguished by the presence of large circular depressions or pits. These large circular pits usually contain burials, fire hearths, burned rock, and other debris. Evidence of multiple episodes of use of these pits suggests that they served several different functions; yet their large size and limited geographical distribution suggest that they likely served as special community landmarks. Such sites may represent seasonal gathering points of tribes for the purposes of trading, finding marriage partners, and seeing relatives. Increasing population densities and decreasing territory sizes made the reinforcement of social ties critical to survival during times of food shortages. Relatives or trading partners in neighboring groups would welcome one into their home territory if their food supplies were ample.

Late Prehistoric Period — (A.D. 700 - 1600)

This period represents a significant shift in the lifeways of the occupants of the Upper Trinity River drainage. Technological innovations, such as the use of the bow and arrow, provided a more effective

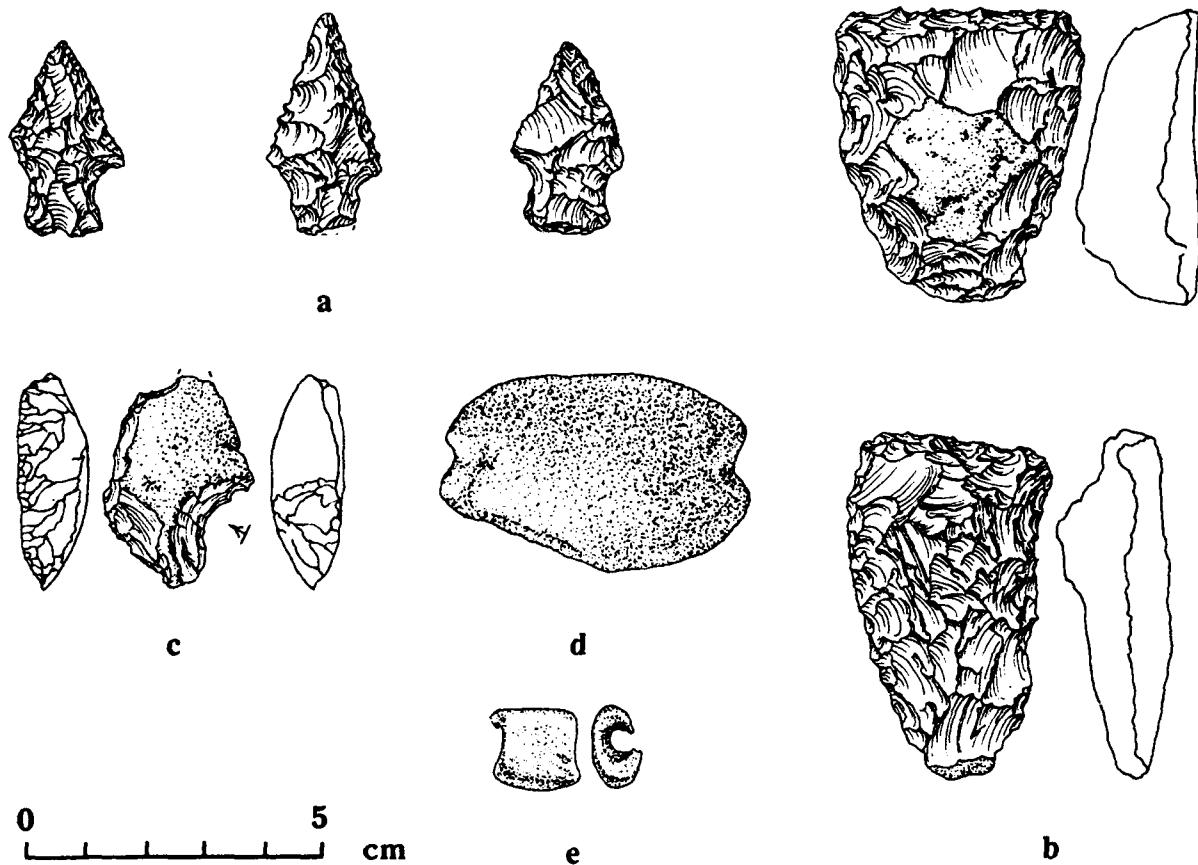


Figure 24. Archaic Period artifacts: (a) spear points, (b) gouges, (c) scraper and notch, (d) stone sinker, and (e) ocean shell bead.

hunting method and the introduction of pottery vessels improved the storage of foods. A more settled lifestyle was adopted, with larger groups of people living in small villages for extended periods. This sedentary lifestyle may have been largely due to the addition of corn horticulture to the use of other native foods. It is likely these innovations were responses to the pressure of an increasing population and an increasingly drier climate.

The Late Prehistoric Period is usually divided into an early and late phase. The early phase is usually characterized by the presence of stone arrowheads made on a chipped flake (known as Scallorn and Alba arrow points, Figure 25-d), clay pottery with *punctuated* and *incised* decorations (Figure 26),

and food remains collected from wild sources. The late phase is characterized by Perdiz arrow points, various unstemmed, triangular points, clay pottery tempered with broken and burned pieces of mussel shell, bevelled stone knives, increased bison hunting, and planting of corn. The excavations at Joe Pool Lake, however, have shown that archaeologists' impressions of the Late Prehistoric period have been biased by a lack of thoroughly excavated sites and inadequate recovery techniques. Excavation of the Baggett Branch site, the Cobb-Pool site, and site 41DL199 revealed significant changes in the technology and lifestyle of the occupants of Mountain Creek drainage during the Late Prehistoric period. Three phases of development are represented.

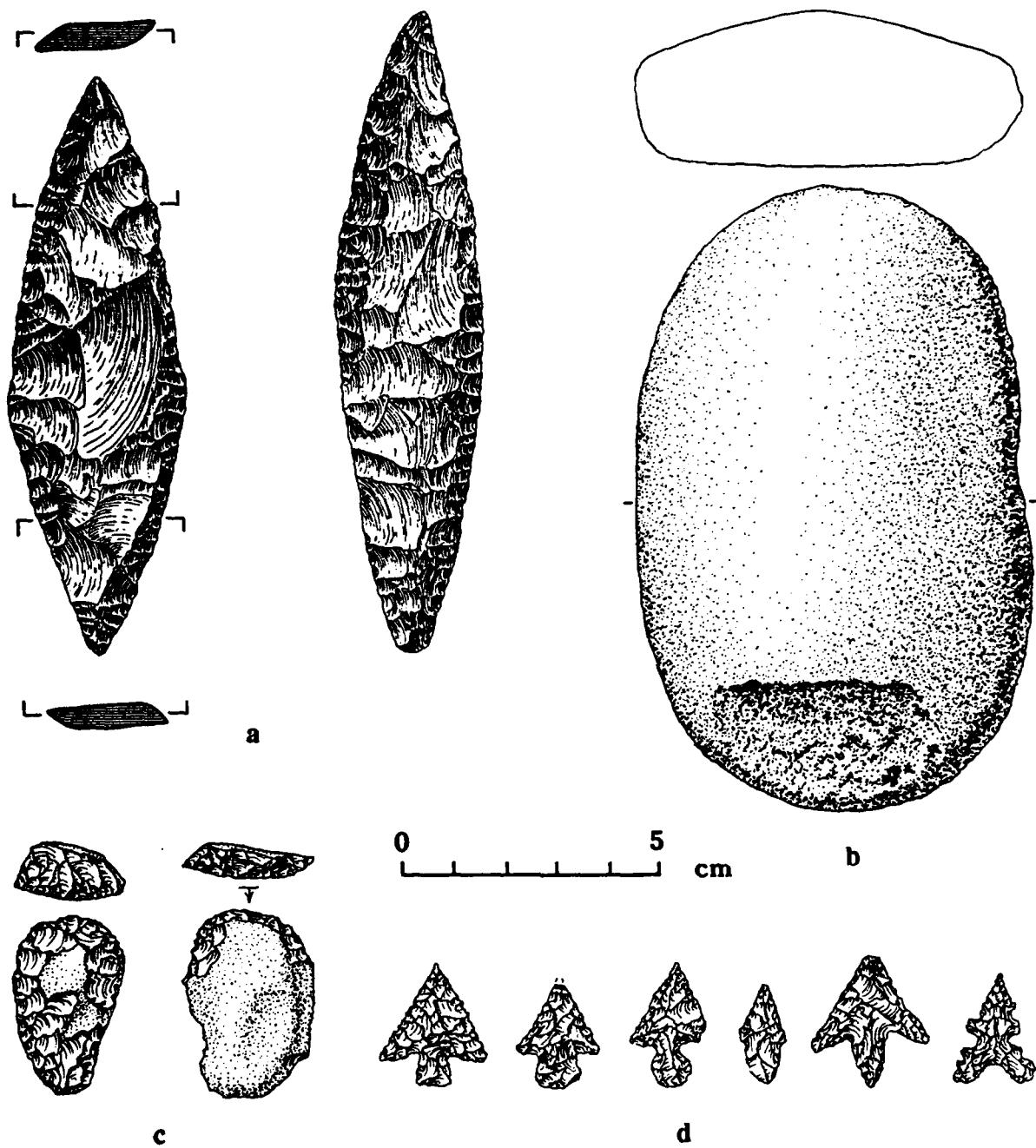


Figure 25. Late Prehistoric period artifacts: (a) beveled knives (after Turner and Hester 1985:229), (b) mano, (c) end scrapers, and (d) arrow points.



Figure 26. Prehistoric ceramic sherds with punctated, incised, and engraved decorations from Joe Pool Lake. The sherds are about 800 years old.

Early Phase — (A.D. 700 - 1000)

During this phase the spear and *atlatl* were replaced by the bow and arrow. The bow and arrow was a more effective weapon for both solitary hunting and group warfare. Ceramic vessels also appear within the Mountain Creek drainage during this period. These vessels likely replaced baskets, hollowed out gourds, and sewn hide bags as storage vessels and also provided a means of cooking over an open fire. Aside from these technological innovations, most other aspects of living do not appear to have changed from that of the Late Archaic period.

The lack of physical remains from domesticated plants suggests that hunting and gathering were still the primary means of obtaining food and clothing. Nutshell and prairie turnip fragments are the most common plant remains recovered from these sites,

while deer and aquatic species such as turtle, fish, and clams also continued as very important foods.

It is possible that the Mountain Creek area was being used by prehistoric people only on a seasonal basis during this period. Their occupations were likely short term with frequent moves to new camp locations. The yearly territory of these inhabitants had not changed greatly from that of the Late Archaic period. However, no evidence of broad regional contact or trade, such as marine shell beads, has been recovered so far. Analysis of the types of small stone arrow points found in the Mountain Creek area reveals that the Joe Pool Lake specimens may be recognized as stylistically different from the arrowhead types found along the Brazos River to the west and the Middle Trinity River to the east. Consequently the local resident population of the Joe Pool Lake area may form a tribal group along with other groups living along the West Fork of the Trinity River.

Middle Phase — (A.D. 1000 - 1300)

Although only three sites within the Mountain Creek drainage contained artifacts of this period, one site, Cobb-Pool, was the most intensively occupied site within the Joe Pool Lake area. The Cobb-Pool site revealed evidence of a *horticultural* community dating between A. D. 1100 and 1200. Evidence of three house structures and associated features, a large pit interpreted as an earth oven, posts for food drying and storage platforms, and refuse disposal areas make up the archaeological record left behind by this small village (Figure 27). The food remains from this site document an economic *adaptation* not recognized previously in North Central Texas. A heavy reliance on maize (corn) is indicated by many fragments of kernels and cobs recovered from the site. Prairie turnips and nuts were present as relatively minor supplements to the diet. Deer and river animals were again the major sources of meat.

At the same time that this village was occupied, a more temporary hunting and gathering site was occupied along an upland stream. The Baggett Branch site was also occupied by people who left Scallorn and Alba arrow points, grit and grog

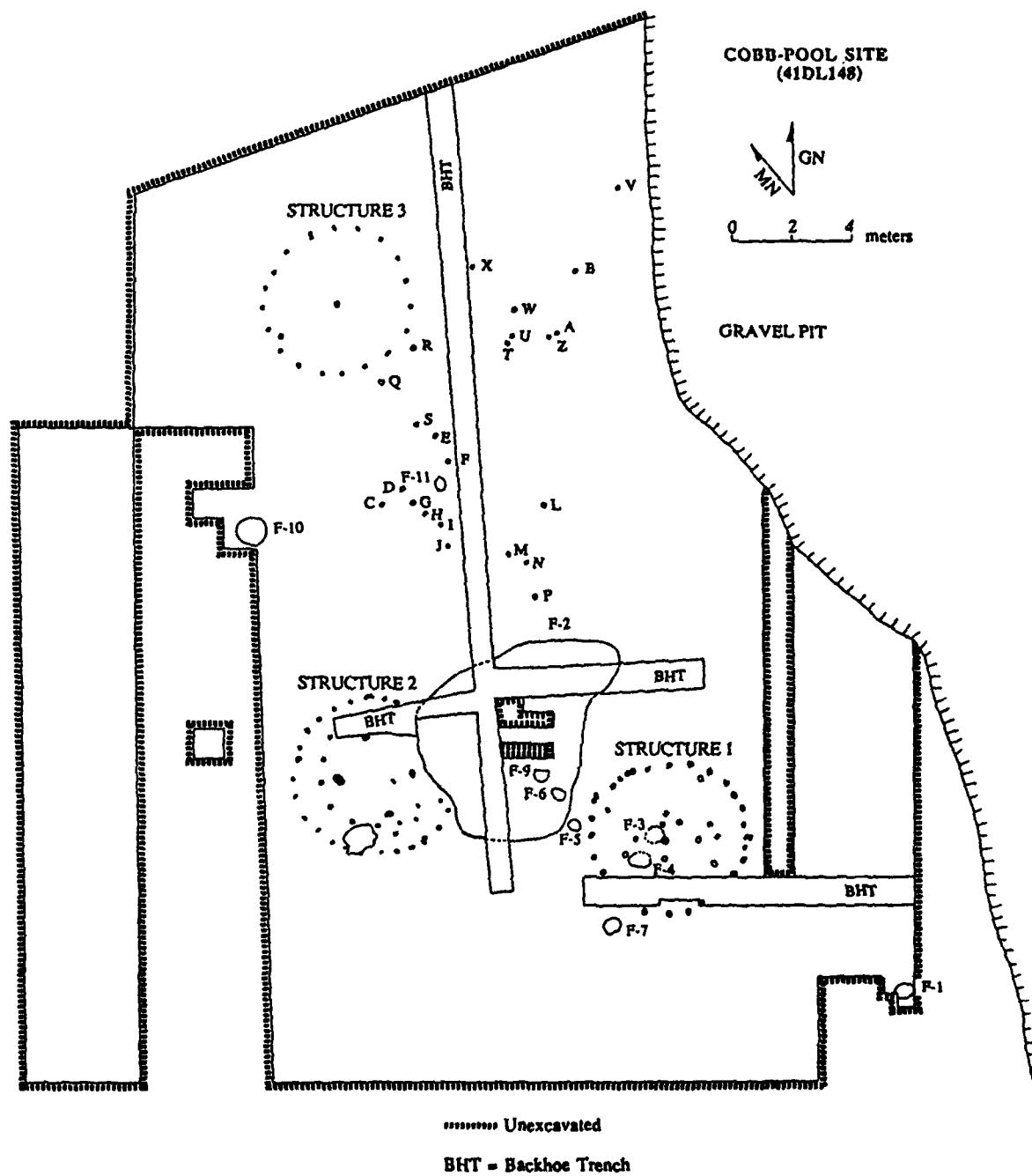


Figure 27. Map of Cobb-Pool site showing major features (Labeled F-1 to F-11), post holes (A to Z), and 3 prehistoric houses occupied about 800 years ago.

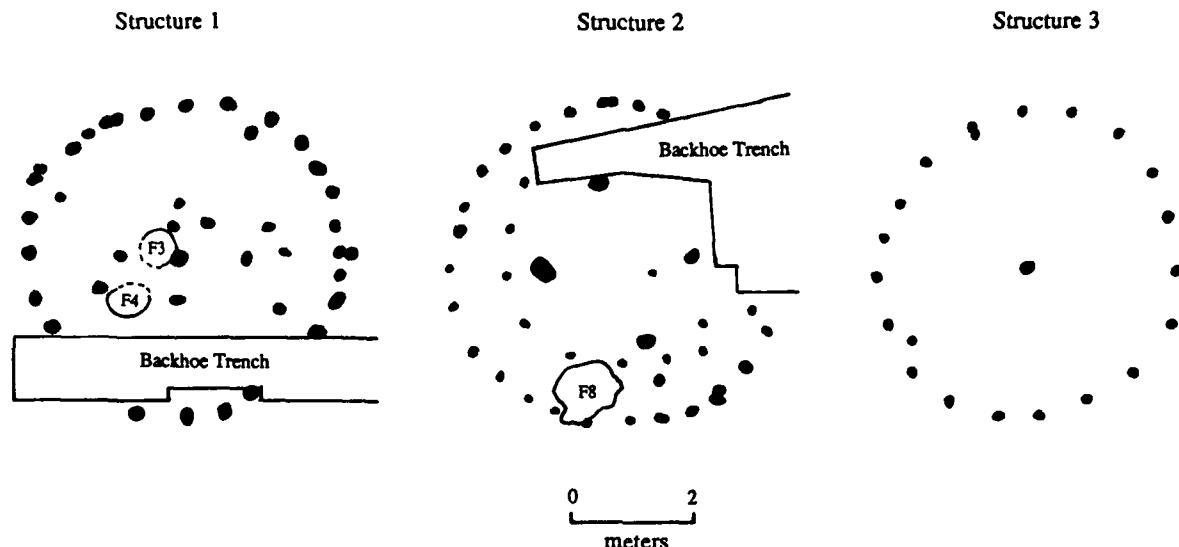


Figure 28. Detailed maps of the posthole patterns of Structures 1, 2, and 3 at the Cobb-Pool site.

tempered pottery. They exploited river and woodland food resources. No corn, however, was recovered from this site. It is likely that this site represents a seasonal hunting and gathering camp of a group occupying a more permanent village such as the Cobb-Pool site.

The wood post and grass thatched house structures at the Cobb-Pool site were recognized by filled post holes preserved in the clay subsoil of the site. The rotted posts from these structures left dark organic stains after they decomposed. The patterns of these dark post hole stains indicated that the houses were circular and (Figure 28) 15 to 17 feet in diameter. Large interior posts were used to support a thatched roof. The walls, depending on the season of the year, may or may not have been thatched. Three different house patterns were outlined by the post hole stains.

The three structures at the Cobb-Pool site may have been used during different seasons or served different functions. The close spacing of the wall posts of Structure 1 and the presence of additional wall and interior posts may indicate rebuilding of the structure (Figure 28). Structure 2, on the other hand, exhibits a four post, interior support system and an interior arc of postholes which probably represent

the support posts for a bench. The bench may have served as a sleeping or storage area. Structure 2 was apparently built over a portion of the area used previously for earth baking ovens (Figure 27, 28). Its proximity to the baking oven area may have contributed to its destruction, for it is the only structure which burned.

Structure 3 exhibits yet another construction style. A single center post provides support for the roof and the spacing between the outer wall posts is much greater than the other structures. It appears that Structure 3 was never enclosed. Such a structure likely served as a shaded work area or a more open summer house. Whichever is the case, such variability is not unexpected. These structures may have been very similar to those of a historic Caddo farmstead which was photographed in eastern Oklahoma in the 1870s (Figure 29). Figure 30 represents an artist's reconstruction of how the Cobb-Pool village may have looked.

A primary focus of activity at the Cobb-Pool site centered around Feature 2, a large pit located between Structures 1 and 2. Although the pit appears to be 20 to 25 ft in diameter and 40 inches deep, it grew to reach this size from repeated use of the area for baking food by burying it with hot

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Figure 29. "Long Hat's Camp," a Soule photograph of a Caddo farmstead in eastern Oklahoma, 1868-1872 (Courtesy of the Smithsonian Institution).

rocks and coals. The distribution of burned rock and animal bones supports this conclusion that Feature 2 served as a food processing area. The wide variety of bones represented and the relatively low percentages of burned bone indicate food processing and cooking activities rather than refuse dumping. The presence of so much burned rock in relation to the pit suggests that earth oven baking was the primary activity in this area.

The distribution of artifacts in the pit indicates that such baking ovens were only 2 to 2.5 feet in depth (Figure 31). The pit was first dug with the aid of a digging stick, possibly a clam shell, and the hands. Rocks, heated in a nearby hearth, were then placed in the pit and covered with green grass and leaves. Then, prairie turnips, nuts, or meat may have been placed in the pit for baking or roasting. More grass and dirt were placed over the food to seal in heat, thus forming an earth oven.

Flotation, or gentle water separation, of the soil from features such as cooking hearths, baking ovens, and storage pits revealed that corn was grown by the occupants of the Cobb-Pool site. This dependence on corn was the critical factor determining the village location. Unlike most of the other sites at Joe Pool Lake, Cobb-Pool sits on a high terrace some distance from a stream. This location also corresponds to that of one of the few patches of Siliwa fine sandy loam soil in this area. It seems that a soil, easily tillable by simple hand tools such as digging sticks, was more important than access to other forest and stream resources. Although wild plant and animal foods were still being exploited fully, it appears that the practice of corn horticulture provided the key to establishing this year-round occupation.

As noted earlier, the presence of Caddoan-like pottery at this site led to the suggestion that a group of Caddoan people settled on the prairies at Cobb-Pool. If this interpretation is correct, one would expect changes in tool styles, raw materials used, and decorative styles of the ceramics. Admittedly, the rather abrupt formation of a small village, corn horticulture, and the Caddoan-like pottery leads one to regard the site as a Caddoan frontier settlement. An examination of the evidence for regional interaction, however, reveals that influences were probably as strong from the west as from the east.

The use of chert as a major source of rock for tools clearly points to the same resource areas used by the previous occupants of the Mountain Creek basin. An intrusive Caddoan group would have carried more quartzite tools with them and would have used the quartzite sources along the Trinity River drainage. The recovery of the Gahagan-like bifaces of Central Texas flint and two obsidian flakes from the site by R. King Harris, a prominent avocational archaeologist, also denote interaction with people to the west. The stylistic analysis of the Alba points from the Cobb-Pool site also revealed that the projectile point assemblage is distinguishable from similar assemblages to either the east or west.

Indirect influence from the Caddoan societies of East Texas cannot be ruled out for this site. Designs on clay pottery in the form of incised lines, *punctates*, and finger nail impressions are characteristic of the Caddoan wares to the east. Circular house structures with either a center post or a four post support system in the Middle Trinity River drainage also exhibit some similarities to Caddoan construction⁸. These similarities to Caddoan sites are too generalized, however, to indicate more than indirect ties to Caddoan people to the east. Instead, the Cobb-Pool site represents an example of a local group of people who borrowed some ideas from neighbors. Their home territory was getting smaller and they were forced to use their resources more intensively. Corn, as a domesticated plant, was added to their food resources to compensate for any unexpected changes in wild plant and animal

⁸Martin, W.A. and J.E. Bruseth, "Description and Analysis of Cultural Features," Chapter 4. In Richland Creek Archaeological Project Volume II. Richland Creek Archaeological Project Technical Series. Archaeology Research Program, Southern Methodist University, Dallas (1987).

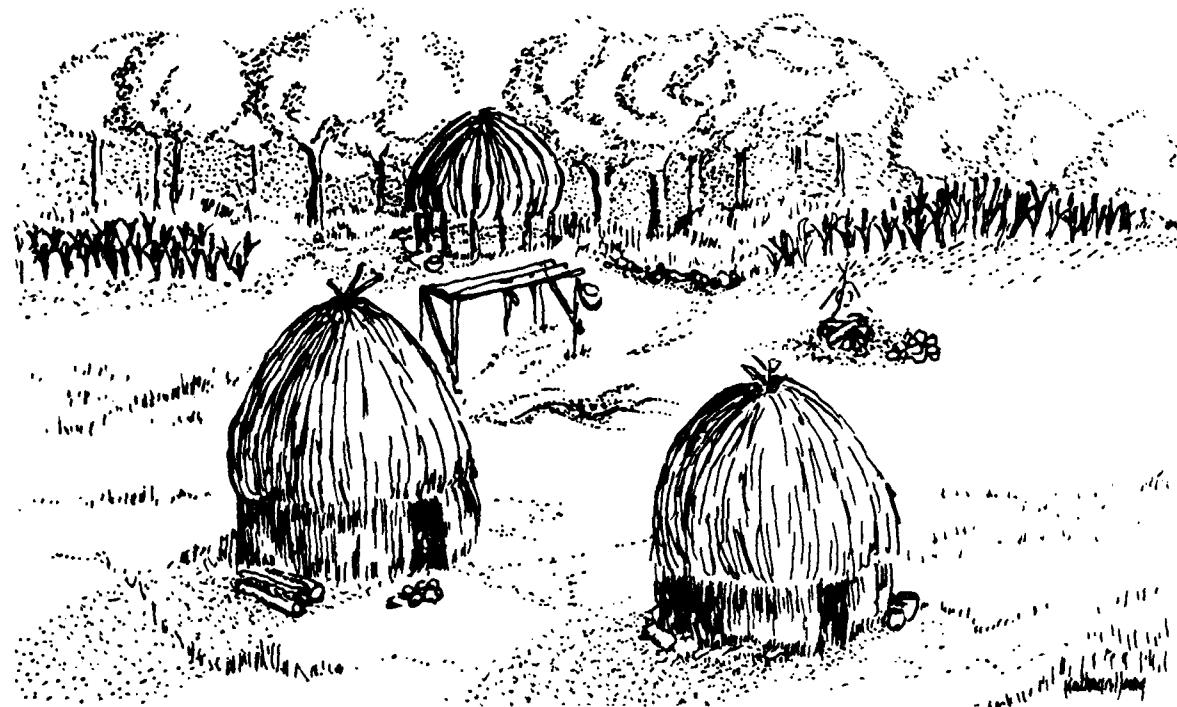


Figure 30. Artist's reconstruction of the Cobb-Pool site.

populations. Interaction to the east and west with relatives and trading partners also provided an assurance of help in times of stress.

Late Phase — (A.D. 1300 - 1600)

The only site with significant evidence of occupation during the late phase of the Late Prehistoric period is the Baggett Branch site. Perdiz and Fresno arrow points and shell tempered pottery are the important artifacts which identifying sites from this period. The occupation of the Baggett Branch site appears to have been considerably less intense than the permanent settlement at Cobb-Pool during the previous phase 300 years earlier. Features that are assigned to this occupation included rock-lined hearths and concentrations of burned rock. Although no house structures were identified, the high density of *daub* (burned clay used to cover grass thatching) in the northeast portion of the site

strongly suggests that one or more structures may have been present.

The subsistence remains from the Baggett Branch site indicate important changes in the use of both plant and animal foods. Although deer apparently continued to be a dominant food source, bison remains appear for the first time. This increasing emphasis on bison hunting late in the Late Prehistoric period is part of a regional trend that has been recognized for North Central Texas in general. This shift parallels a regional climatic trend toward drier conditions⁹. Walnut and prairie turnip remains were the most common plant remains from late phase contexts. Unlike the Cobb-Pool site, corn was recovered in only limited amounts at Baggett Branch. It is possible that an increasingly drier climate had made corn horticulture less reliable by this time. However, it is also possible that the

⁹Lynott, M.J., Prehistoric Bison Populations of North Central Texas. *Bulletin of the Texas Archaeological Society* 50:89-102, 1979.

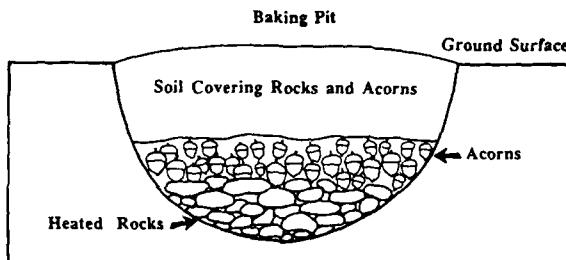


Figure 31. Artist's reconstruction of prehistoric baking activities.

Baggett Branch site represents only a single part of a larger settlement system used by these late phase peoples. Without data from other contemporaneous sites in this region, the overall importance of corn to these people cannot be conclusively determined.

In addition to the increased emphasis on bison hunting, certain other artifacts appear during this phase showing an increasing orientation toward the Southern Plains cultures to the north and west of the Joe Pool Lake area. The steeply-chipped, "Plains" style *end scrapers*, most likely used for processing bison hides, are associated with this time period. A shift in pottery traditions is indicated by the apparent predominance of shell-tempered pottery during the late phase. Apparently, the drying trend of the Late Prehistoric period resulted in the eastward migration of the bison herds. The people of North Central Texas quickly adopted the *tool kit* which was essential for efficient hunting for both food and clothing. A portion of their year was probably spent following the herds of bison. In the early spring and summer they likely returned to small villages where they planted and harvested their corn. Such a pattern was common along the eastern edge of the Plains when European explorers first arrived.

In summary, the prehistoric investigations of the Joe Pool Lake area have demonstrated that small groups of hunters and gatherers used Mountain Creek only seasonally during most of the prehistoric period. The lack of plentiful wild food resources and rocks for stone tools likely contributed to the short term use of the area. The main stem of the Trinity river and the Eastern Cross Timbers zone to the west of the Joe Pool Lake area both offered a wider variety of food, especially nuts, which provided food for both the hunters and the animals they hunted.

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Increasing numbers of people and much drier climatic conditions around A.D. 1000 stimulated the adoption of corn. The presence of tillable soil along the valley sides made Mountain Creek attractive to a more sedentary group of people interested in gardening.

The short term occupation (less than 10 years) of the Cobb-Pool village raises questions concerning the feasibility of corn *horticulture* in the prairie environment. The increasing drought after A.D. 1000 may have made corn a less dependable food source. The Cobb-Pool inhabitants likely moved elsewhere where the drought was not as severe. Corn horticulture continued to be used along major river systems of North Central Texas, but Mountain Creek was never settled intensively by prehistoric people again.

By A.D. 1500 the lifestyle of the Mountain Creek inhabitants had changed again. The drought had thinned the post oak forest of the Eastern Cross Timbers and herds of bison were moving eastward onto the prairies of North Central Texas. This bountiful source of food, clothing, and shelter was quickly exploited by local prehistoric people. Although this change in lifestyle and the prior adaptation of corn horticulture might be interpreted as movement of new people into this area, it is more likely that a local population was merely trying new ideas to survive in a situation where the numbers of people were increasing, the climate was becoming drier, and food resources were becoming scarce. As people do today, they were simply "trying to get by."

CONCLUDING REMARKS

Archaeological investigations in the Joe Pool Lake area have involved both conservation and rescue archaeology. The extensive architectural and archaeological deposits at the John Wesley Penn farmstead, for example, were investigated and documented. Similar conservation oriented investigations were conducted at five other historic sites located on major lake shore parks. The Cobb Pool site, on the other hand, received major rescue archaeology efforts to recover important information from this Late Prehistoric small village settlement. Four other prehistoric and seven other historic sites

Four other prehistoric and seven other historic sites also received rescue archaeology operations directed at identifying important remains and recovering data useful for fulfilling the questions outlined in the research design presented earlier. All of these studies have been funded by the U.S. Corps of Engineers (Fort Worth District), the primary sponsor behind the construction of Joe Pool Lake.

From these investigations, we have gained a few more insights into the history and prehistory of the Mountain Creek area. Excavations of historic farmsteads have indicated that many mid- and late nineteenth century families lived in well constructed, frame dwellings. Log buildings were not as common as once believed. Both Dallas and Fort Worth attracted saw mills along the Trinity bottomlands and sawn lumber was available to most families by the 1850s.

The artifacts recovered from excavations of the yard areas around dwellings have also provided us with some insights into family life and household possessions. Home canning using the glass fruit jar indicates a break from older traditional foodways by the turn-of-the-century (i.e., 1900). Animal bones

indicate a strong reliance on beef rather than on the more traditional pork. Both of these pieces of evidence support the dominance of a Midwestern orientation of foodways that diverges from most Texas counties to the south. The plain white ceramic tablewares and the low consumption of bottle glass for the same period, on the other hand, both correspond more closely with Southern traditions.

One message is clear from these studies. Both human adaptations (culture and technology) and the natural environment have changed tremendously over the last 12,000 years. From the evidence of the earliest sites found that were occupied some 6,000 years ago, up to the first American settlers about 140 years ago, the Mountain Creek area has been affected by nature's relentless fluctuations. The archaeological investigations sponsored by the United States Army Corps of Engineers at Joe Pool have provided a few brief glimpses into the rich record of human history and prehistory of this area. Time's march never ceases and in another thousand years, future generations may be equally interested in our own society and its archaeological remains.

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GLOSSARY

Adaptation — The process of change to better conform with environmental conditions or other external stimuli.

Anthropology — The scientific and humanistic study of man's present and past biological, linguistic, social, and cultural variations. Its major subfields are archaeology, physical anthropology, cultural anthropology, and anthropological linguistics.

Archaeological Context — The physical setting, location, and cultural association of artifacts and features within an archaeological site.

Archaeology (also spelled Archeology) — The scientific study of the physical evidence of past human societies recovered through the excavation. Archaeologists not only attempt to discover and describe past cultures, but also to formulate explanations for the development of cultures.

Archaeologist — Anyone with an interest in the aims and methods of archaeology. A professional archaeologist usually holds a degree in anthropology with a specialization in archaeology and is trained to collect archaeological information in a proper scientific way.

Artifact — Any object manufactured, used or modified by humans. Common examples include tools, utensils, art, food remains, and other products of human activity.

Assemblage — A group of artifacts related to each other based upon some recovery from a common archaeological context. Assemblage examples are artifacts from a site or feature.

Atlatl — A wood or bone shaft implement, held in one hand, and used to propel a spear. The tool functions as a lever, giving greater thrust and distance.

Botanist — A person who pursues the scientific study of the structure, growth, and identification of plants.

Caddoan Culture Area — The geographical region that encompasses eastern Oklahoma, southwestern Arkansas, western Louisiana, and eastern Texas which was the homeland of the Native American Caddo people.

Central Hall — A frame house consisting of two rooms and an enclosed central hall. When this house type is two story it is called an "I" house.

Chert — A very fine grained rock formed in ancient ocean sediments. It often has a semi-glassy finish and is usually white, pinkish, brown, gray, or bluegray in color. It can be shaped into arrowheads by chipping. It has often been called flint, but true flint is found in chalk deposits and is a distinctive blackish color.

Conservation Archaeology — A subfield of archaeology which focuses on the preservation of archaeological resources. This position encourages the stabilization and preservation of archaeological sites as opposed to their immediate excavation.

Cultural Resource Management — A branch of archaeology that is concerned with developing policies and action in regard to the preservation and use of cultural resources.

Cultural Resources — Sites, structures, landscapes, and objects of some importance to a culture or community for scientific, traditional, religious, or other reasons.

Daub — Clay used to fill in the holes and gaps between the wood or thatching of a wall. It was used by both Indians and European settlers in North America to construct houses.

Dendrochronology — The scientific study of the annular growth of trees. Trees produce rings of various thickness annually in response to rainfall. Tree-rings therefore, can be used to reconstruct fluctuations in rainfall in the past, reflecting past climatic conditions.

Demography — The study of the distribution, density, and vital statistics of populations.

Double Crib — Two rooms or chambers connected by a single roof to form a barn used for storage of grains or stabling of animals.

Eastern Cross Timbers — A relatively narrow, north-south strip of forested land that divides the Grand Prairie to the west from the Blackland Prairie to the east in North Central Texas. The Eastern Cross Timbers are associated with the sandier soils of the Woodbine geologic formation.

Ecology — The study of interrelationships of organisms and their environment.

End Scraper — A stone tool formed by chipping the end of a flake of stone which can then be used to scrape animal hides and wood.

Fauna — A Latin term which refers to animals remains, as opposed to flora which refers to plant remains.

Features — Evidence of human activities visible as disturbances in the soil. Such disturbances are produced by digging pits for storage, setting posts for houses, or by constructing a hearth for cooking. These disturbances are often distinguished by soil discolorations.

Flotation — A method of obtaining seeds and other organic materials from soil by using liquids.

Flute — A long, narrow flake removed from a spear point to aid in the binding of the point to the spear shaft.

Geologist — A person who studies the history of the earth and its life, especially as recorded in rocks.

GORGET — An ornament usually worn over the chest which may be either suspended on a cord or attached directly to clothing.

Grit and Grog Tempered Pottery — Sand (grit) and crushed pottery sherds (grog) mixed in the unfired clay to make ceramic vessels stronger. These inclusions prevented the rapid expansion of the paste as the clay's water content was boiled away when the pottery was fired.

Hewn — Wood shaped by heavy cutting or chopping blows struck by hand tools such as axes or adzes.

Historic Sites Act of 1935 — Public Law 74-292; 49 Statute 666 enabling the authorized expenditure of funds for archaeological studies on major land modification projects.

Horticulture — The science and art of growing fruit, flowers, ornamental plants, and vegetables in small gardens.

Incised — A decoration found on pottery consisting of lines drawn into wet clay. When fired, the arrangement of lines leaves a permanent design on the vessel surface.

Interaction Sphere — This term refers to prehistoric groups who shared social interaction and exchanged material goods, through a network made up of long distance trade contacts.

Midden — The layer of soil which contains the by-products of human activity as the result of the accumulation of these materials on their living surface. For prehistoric sites, a layer of soil that was stained to a dark color by the decomposition of organic refuse which also contained food bones, fragments of stone tools, charcoal, pieces of pottery, or other discarded materials. For historic sites, a similar layer of soil but with appropriate historic material remains often in a much thinner deposit.

Mortises and Tenons — A method of carpentry joinery where holes are chiseled as receptacles (mortises) for chiseled projections (tenons) on wooden beams.

National Historic Preservation Act of 1966 — Public Law 89-665, as amended by Public law 96-515, National Historic Preservation Act Amendments of 1980, 94 Stat. 2987. This act and its amendments clearly established the basic funding and implementation of archaeological work in federally funded projects.

National Register of Historic Places (NRHP) — The administrative branch of the Department of Interior that officially reviews nominations of archaeological and historic sites and structures, and guides the federal implementation of cultural resources legislation.

Obsidian — A volcanic glass which is one of the finest raw materials for the chipping of stone tools.

Oral History — Verbally transmitted information about past events. Although often providing information about non-written events, such history is subject to the vagaries of human perceptions and mental recall.

Outbuildings — A term used to refer to all non-residential structures on a site. These include animal pens, storage buildings, sheds, barns, etc.

Outcrops — A term designating the surface exposure of rock layers, which have not been decomposed into soil.

Palynologist — One who studies plant pollen and spores. Since pollen may be preserved thousands of years it can be used to reconstruct the plant ecology of the past.

Parallel Flaking — A technique used in the production of stone tools that is often found on the earliest projectile points from North Central Texas. Long, consistent chipping scars run parallel on the flat sides of stone tools.

Petroglyphs — Carvings in rock which express artistic or religious meaning.

Pictographs — Paintings on rock which express artistic or religious meaning.

Pleistocene — A geologic period, usually thought of as the Ice Age, which began about 1.6 million years ago and ended with the melting of the large continental glaciers creating the modern climatic pattern about 11,500 years ago.

Prehistoric Hunter-Gatherers — Humans who lived prior to written history and depended upon the hunting of wild animals and the gathering of natural plant foods for their livelihood.

Prehistoric Sites — Locations where people who were alive before modern written records existed once lived, hunted, camped, or were buried. Painted or carved rock outcrops are considered sites as well.

Provenience — The three-dimensional location of an artifact or feature within an archaeological site, measured by two horizontal dimensions, and a vertical elevation.

***Psoralea* ssp.** — The prairie turnip, as it is commonly referred to, is actually several species of plants which grow underground tubers. Only one species was actually recorded as having been used by Plains Indians, and only recently has any archaeological evidence for the use of this plant been recovered.

Public Archaeology — (see also Conservation Archaeology) A movement to increase public awareness and education about archaeology which advanced the legislative attempts to provide funding and protection for archaeological sites.

Punctates — Impressions in the surface of ceramic vessels made by implements or by fingernails as a form of decoration.

Quartzite — A stone which was formed in water deposited sediments and consists of sand grains which have been cemented together. It can be chipped, but is difficult to work.

Radiocarbon Dating — A process that provides absolute dates by counting the radioactive decay of carbon in the remains of once living plants and animals (i.e., charcoal, wood, bone, shell).

Rescue Archaeology — A term applied to the emergency salvage of sites in immediate danger of destruction by major land modification projects such as reservoir construction.

Sedentary — A term applied to human groups leading a settled, non-migratory lifestyle.

Sherds — The individual pieces of broken pottery vessels.

Site — A location where human activities once took place and left some form of material evidence.

Soil Scientists — One who studies the distribution, fertility, and chemical and organic composition of the upper layer of the Earth.

State Archaeologist — An appointed official who is responsible for overseeing all potential impacts to archaeological resources and for reviewing and administering all archaeological work in order to insure compliance with state and federal regulations.

Stone Boiling — A type of cooking that is done by heating stones in an open fire and then placing them

in the liquid or substance to be cooked. This is often done in baskets or containers that cannot be placed directly in or over a fire.

Subsistence Economy — The means by which a group obtains the food and shelter necessary to support life.

Territory — The familiar surroundings or home range which is claimed by a group of people.

Test Excavations — Subsurface excavations in areas which are either defined as sites based on surface artifacts or thought to contain buried deposits based on the landform.

Texas Archaeological Research Laboratory — A branch of the University of Texas at Austin that has been appointed as the official state registry for archaeological sites and the repository for archaeological collections.

Timber Frame — an early English building technique using sawn or hewn lumber (cut using hand tools) and joined with mortises and tenons (holes and pegs) instead of nails.

Tool Kit — The set of all weapons and tools that was created and used by a person or group of people.

Working Period Farm — A term usually associated with a working museum exhibit in which a full scale farm has been restored or reconstructed to depict the former lifeways, tools, and technologies of particular periods.

Zoology — A branch of biology that is concerned with the scientific study of animals, including their biology, distribution, and identification.

SUGGESTED READINGS IN ARCHAEOLOGY AND RELATED TOPICS

Ancient Texans: Rock Art and Lifeways Along the Lower Pecos. By Harry J. Shafer. Texas Monthly Press, Austin. 1987. 247 pp. This book provides a vivid portrayal of what prehistoric life may have been like along the Pecos River. The review of the Lower Pecos archaeology and rock art is accompanied by dramatic illustrations and full-color photographs. This book should be of interest to both popular readers and professional archaeologists.

Digging into South Texas Prehistory: a Guide for Amateur Archaeologists. By Thomas Hester. Corona Publishing Co., San Antonio. 1980. This book was written for a popular audience and begins with brief discussion of archaeological field methods and projectile point identification. Topics covered in detail include the South Texas environment, local Historic Indian tribes, types of sites, artifact types, and an overall review of South Texas prehistory.

A Field Guide to American Houses. By Virginia and Lee McAlester. Alfred A. Kropf, Inc., New York. 1984. 525 pp. This guide enables one to identify and place in their historic contexts the common houses seen in any neighborhood (city or countryside). It covers houses dating from the 17th century to the present.

A Field Guide to Stone Artifacts of Texas Indians. By Ellen Sue Turner and Thomas R. Hester (illustrations by Kathy Roemer). Texas Monthly Press, Austin. 1985, 308 pp. This well illustrated volume is an updated reference manual for the identification of Texas artifact types. Also included are sections addressing the principles of projectile point typology, the manufacture and use of stone tools, and problems of context and chronology in Texas archaeology.

The Indians of Texas: From Prehistoric to Modern Times. By W. W. Newcomb, Jr. University of Texas Press, Austin. 1961. 404 pp. Newcomb discusses the lifestyles of the Indian groups present in Texas at the time of European exploration and settlement. This book serves as a reference for students of Texas history, anthropology, and Indian lore.

Indians of the Upper Texas Coast. By Lawrence E. Aten. Academic Press, New York. 1983. 392 pp. This book concentrates on the late prehistoric and historic Indians of the upper Texas coast. The author presents detailed discussions of both the archaeological and historical data pertaining to the peoples of the coastal margin of Texas.

In Small Things Forgotten: the Archaeology of Early American Life. By James Deetz. Anchor Press, New York. 1977. 184 pp. In this account of the archaeology of early American life, the author discusses how the artifacts left behind inform us about how Americans thought, lived, and behaved. Deetz traces the development of the Anglo-American tradition through the archaeology of ordinary people.

Mills of Yesteryear. By A.T. Jackson. Texas Western Press, University of Texas at El Paso. 1971. 103 pp. This book traces the development of gristmills and the towns which grew up around them from the Spanish colonization of Texas until the present. Jackson uses a variety of historical documents to portray the way of life associated with these mills which lasted more than a century.

Oral History for Texans. By Thomas L. Charlton. Texas Historical Commission, Austin. 1985. 129 pp. This book encourages Texans to become involved in recording their cultural heritage through oral histories. The book serves as a technical guide for those (laymen and professionals) who wish to practice oral history.

Scientific Study of the Human Past

Prehistoric Archeology. By Frank Hole and Robert Heizer. Holt, Rinehart and Winston, New York. 1973. 416 pp. This book is a general introductory textbook to prehistoric archaeology. The book attempts to tell how and why archaeology is done. The history of archaeology, theoretical concepts, analytical methods, and interpretive schemes are some of the major topics discussed.

Texas Graveyards, A Cultural Legacy. By Terry G. Jordan. University of Texas Press, Austin. 1982. 147 pp. As a cultural geographer, Jordan discusses the regional and ethnic variation in graveyard types. The book deals with Southern, Hispanic-American, and German graveyards and their associated material culture.

Texas Log Buildings: A Folk Architecture. By Terry G. Jordan. University of Texas Press, Austin. 1978. 230 pp. This book is focused on folk architecture as represented by the log structures remaining in Texas today. Jordan traces the origin of log folk architecture and discusses the cultural and environmental influences on its developments.

Traces of Texas History: Archaeological Evidence of the Past 450 Years. By Daniel E. Fox. Corona Publishing Company, San Antonio. 1983. 416 pp. This book traces historic site archaeology in Texas from its beginnings to the present. Fox reviews nearly every major report of historic archaeology in Texas in a general historical framework which provides a readable historical perspective. The book is written for the general reader as well as the professional archaeologist.

Additional archaeological publications are also available through the following organizations. These organizations publish a variety of reports concerning archaeological and historical research in Texas.

Archaeology Research Program
Institute for the Study of Earth and Man
Southern Methodist University
Dallas, TX 75275

Archeological Research Laboratory
Texas A & M University
College Station, TX 77843

Center for Archaeological Research
The University of Texas at San Antonio
San Antonio, TX 78285

Dallas Archeological Society
P.O. Box 28026
Dallas, TX 75228-0026

Espey, Huston and Associates, Inc.
P.O. Box 519
Austin, TX 78767

Institute of Applied Sciences
University of North Texas
Denton, TX 76202

Prewitt and Associates, Inc.
Suite 104
7701 N. Lamar Blvd.
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